

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Michelle Lujan Grisham**  
Governor

**Sarah Cottrell Propst**  
Cabinet Secretary

**Todd E. Leahy, JD, PhD**  
Deputy Secretary

**Dylan Fuge**, Division Director  
Oil Conservation Division



**BY ELECTRONIC MAIL ONLY**

June 6, 2023

Rebecca Moore  
Frontier Field Services  
10077 Grogans Mill Road, Ste. 300  
The Woodlands, TX 77380  
RMoore@durangomidstream.com

**RE: Frontier Field Services - Notice of an Administratively Complete Discharge Permit Application for Maljamar Gas Plant**

Dear Ms. Moore:

The New Mexico Energy, Minerals and Natural Resource Department's Oil Conservation Division (OCD) has reviewed your amended discharge permit application, dated May 22, 2023, for Frontier Field Services' (Frontier), Maljamar Gas Plant. OCD has determined that the amended discharge permit application is administratively complete.

Given OCD's determination, Frontier must provide public notice within 30 days of receipt of this letter (i.e., July 6, 2023) in accordance with the requirements of 20.6.2.3108(B) NMAC to the general public in the locale of the Gas Plant by each of the methods listed below:

1. Prominently posting a synopsis of the public notice at least 2 feet by 3 feet in size, in English and in Spanish, outside of the Gas Plant's main administrative office at 1001 Conoco Road, Maljamar, NM 88260 and at the Maljamar Post Office located at 11060 US-82, Maljamar, NM 88264 for 30 days;
2. Providing written notice of the discharge by mail or electronic mail, to owners of record of all properties within a 1/3 mile distance from the boundary of the property where the discharge site is located; if there are no properties other than properties owned by the discharger within a 1/3 mile distance from the boundary of property where the discharge site is located, Frontier shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger;
3. Providing notice by certified mail, return receipt requested, to the owner of the discharge site if the applicant is not the owner; and

4. Publishing a synopsis of the notice in English and in Spanish, in a display ad at least three inches by four inches **not** in the classified or legal advertisements section, in the Hobbs News-Sun.

As per 20.6.2.3108(F) NMAC, the notice must also include the address and phone number within OCD by which interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices and that OCD will accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices. The following OCD contact information must be included in the notice:

Shelly Wells – Environmental Specialist Advanced  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505  
(505) 469-7520  
Shelly.Wells@emnrd.nm.gov

Within 15-days of completion of the public notice requirements in 20.6.2.3108(B) NMAC, Frontier must submit to the OCD proof of the notice, including affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

Also, as part of the discharge permit application, Frontier was required to submit a Closure/Post Closure Plan for OCD approval. OCD has reviewed this plan and hereby approves the Closure/Post Closure Plan. The financial assurance (FA) associated with this plan is \$1,081,900. The FA must be on OCD-prescribed forms, or forms otherwise acceptable to the OCD, payable to the OCD. Bond forms can be found at the bottom of OCD's Forms Page located at <https://www.emnrd.nm.gov/ocd/ocd-forms/>. The FA is due to the OCD within 30-days of email receipt of this letter (i.e., July 6, 2023).

If you have any questions, please do not hesitate to contact me by phone at (505) 469-7520 or by email at [Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov). On behalf of the OCD, I wish to thank you and your staff for your cooperation during this process.

Regards,

*Shelly Wells*

Shelly Wells  
Environmental Specialist- Advanced

**Rebecca Moore**

Environmental Advisor  
Durango Midstream  
10077 Grogans Mill Rd  
The Woodlands, TX 77380  
[rmoore@durangomidstream.com](mailto:rmoore@durangomidstream.com)



May 22, 2023

Ms. Shelly Wells  
Oil Conservation District  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Groundwater Discharge Permit Application  
Maljamar Gas Plant

Dear Ms. Wells:

As requested in your March 23, 2023 letter, attached please find updates to the Groundwater Discharge Permit application for the Maljamar gas plant.

If additional information is needed, please call me at (346) 224-2455, or email at [rmoore@durangomidstream.com](mailto:rmoore@durangomidstream.com).

Sincerely,

A handwritten signature in blue ink that reads "Rebecca Moore".

Rebecca Moore

CC: Mary Taylor, Environmental Manager  
Darin Kennard, Vice President & GM  
John Prentiss, Sr Area Manager  
Bobby Mallett, Foreman Field Ops  
James Collins, Field Maintenance Foreman

Groundwater Discharge Permit Application  
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Attachment A - RO Wastewater Analytical Results

## Introduction

This application provides information as specified in *NMOCD's Guidance Document for Ground Water Discharge Permit Applications at Refineries, Natural Gas Plants, Well Pad Tank Batteries, Gas Compressor Stations, Crude Oil Pump Stations, and Oil and Gas Service Companies* and requested by NMOCD by letter dated October 3, 2022. This submittal is in response to requested amendments detailed in the NMOCD's March 23, 2023 letter.

## 1.0 Facility Description

The Maljamar Gas Plant consists of a natural gas treatment plant that is designed to treat natural gas prior to delivery to a midstream transmission company. The facility is a 60 MMcfd plant and gathering facility. The facility utilizes a cryogenic process to remove simple alkanes (i.e. ethane, propane, pentane and hexane) from natural gas and third party y-grade (liquid hydrocarbons). The unprocessed material is transported to the facility via pipelines. The gas is compressed and sent to an amine system to remove carbon dioxide and hydrogen sulfide, dehydrated and cooled. Natural gas liquid and residue gas products leave the facility by means of pipelines.

### 1.1 Facility Type

The Maljamar Gas Plant is an existing gas processing plant that receives sweet and sour gas, dehydrates, removes H<sub>2</sub>S to pipeline specifications, and delivers to a third party for pipeline transportation.

### 1.2 Contact Information

- Facility Address:  
Frontier Field Services, LLC  
1001 Conoco Road  
Maljamar, NM 88260  
Facility Phone: 575-677-5108  
Plant Contact: John Prentiss  
Email: [JPrentiss@durangomidstream.com](mailto:JPrentiss@durangomidstream.com)
- Owner/Operator Address:  
Frontier Field Services, LLC  
10077 Grogans Mill Road, Suite 300  
The Woodlands, TX 77380  
Corporate phone: 346-224-1000  
Technical Contact: Rebecca Moore  
Email: [RMoore@durangomidstream.com](mailto:RMoore@durangomidstream.com)
- Operator OGRID number: 221115

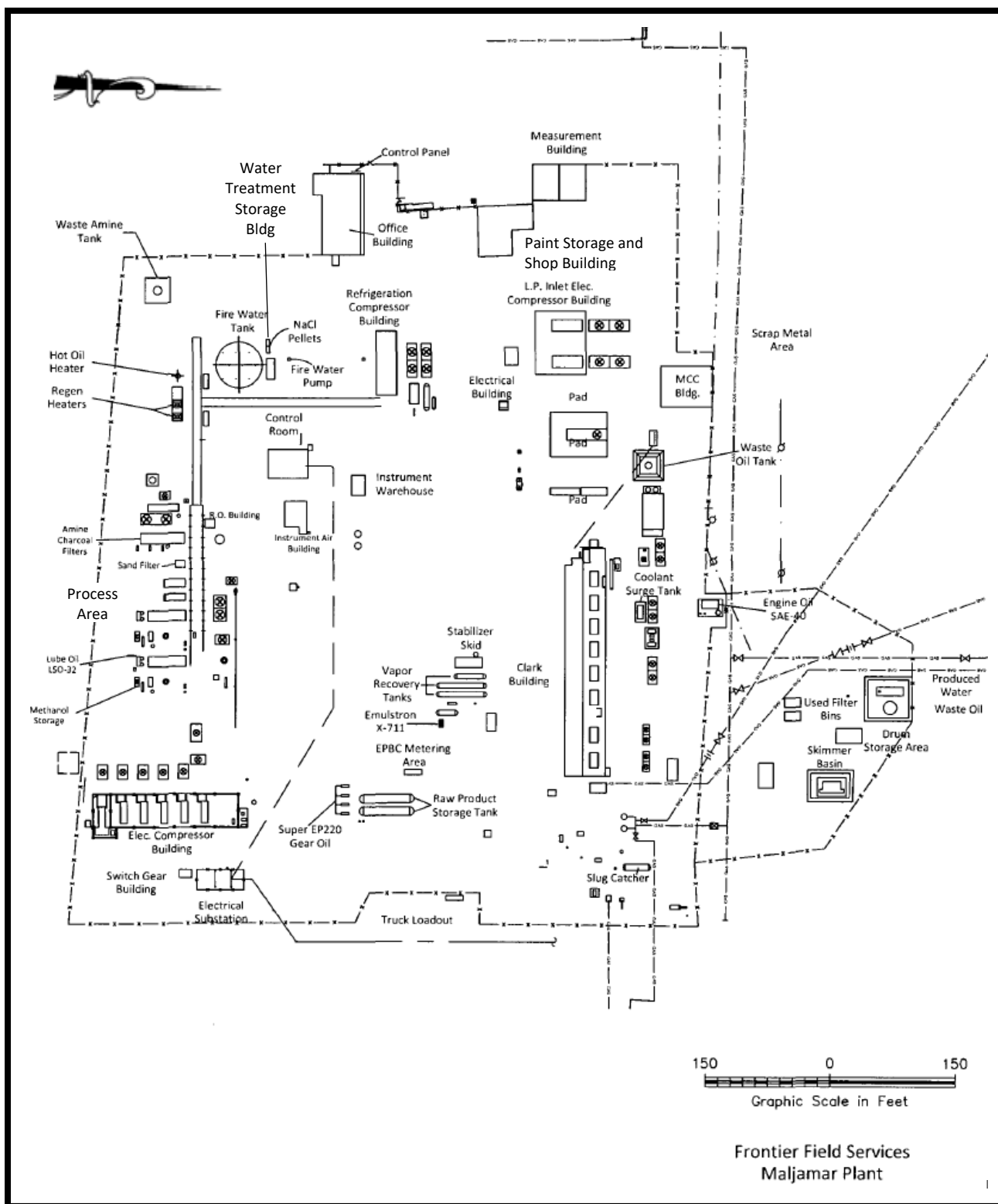
The facility is located in SE/4, SW/4, Section 21, Township 17S, Range 32E, NMPM, Lea County, New Mexico. It is accessible by driving 2.8 miles south of Maljamar on County Road 126A, then right for 0.5 miles on Conoco Road. Facility coordinates are 32.81408392694328, -103.77080456492772.

See the Facility Diagram on the next page for additional details.

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## 1.3 Facility Equipment Diagram



## 2.0 Site Characteristics

### 2.1 Topography

The Maljamar facility located approximately three miles south of Maljamar, on the southerly slope of Taylor Hill, a rise about 0.5 mile to the north. The location is in an area of vegetation-stabilized sand dunes without any incised water drainages. Surface water percolates into the subsurface at a rate of 20 inches per hour. No water bodies, streams, or groundwater discharge sites were noted within a mile of the facility's perimeter. The nearest ephemeral watercourse is Taylor Draw, about 3.5 miles to the west. Taylor Draw flows southwest, anastomosing before disappearing in the sand dunes.

### 2.2 Surface Soils

The facility is in the Baish Oil Field of the Pecos Slope, a broad, low eastward dip of about 50 to 100 feet per mile. East of the site is the Mescalero Arch, and south of the facility are the Querecho Plains. The eastern extents of the Pecos Slope are the extramontane Delaware and Midland Basins. This monocline is imprinted with other structural features, including the southern flank of the Artesia-Vacuum Arch. The Artesia-Vacuum Arch extends from beneath the Pecos Valley fill to the west, extending through Townships 17 to 19 South, eastward to Range 35 East in Lea County<sup>1</sup>. The arch is covered primarily by post-Permian strata.

Surface soils are dominated by the eolian fine sand mapped by the Natural Resources Conservation Service (NRCS) as the Kermit soils and dune land, 0 to 12 percent slopes. This Quaternary eolian and piedmont deposited soil has the landform characteristics of coppice dunes three to seven feet high, 25 to 50 feet in diameter, with a wind-formed elongation to the northeast.

### 2.3 Surface Waters

No surface water features are located within or near the facility. No groundwater discharges exist within a mile of the facility.

### 2.4 Groundwater

Based on the New Mexico Water Rights Database<sup>2</sup> from the New Mexico Office of the State Engineer, no freshwater wells are located within a one-mile radius of the Maljamar facility. There are a number of groundwater monitoring wells associated with a historical remediation project described below.

A generalized cross-section prepared by Maxim Technologies, Inc. for the groundwater investigation indicates the surface of blow sand and a complex subsurface stratigraphy. A caliche layer bisecting the 60-foot-thick sand is most likely an illuviation horizon relict from previously higher standing water table conditions. This sand is deposited unconformably over 30 to 50 feet of Triassic-aged Chinle green shale, which acts as a confining layer for an underlying sandstone unit. A "low TDS (total dissolved solids) - bicarbonate water" is density segregated from saline waters overlying Triassic Red Beds. The groundwater investigation at the facility is being conducted by ConocoPhillips, a prior owner, with Tetra Tech, Inc. currently performing investigation and remediation activities.

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<sup>1</sup> Kelley, 1971

<sup>2</sup> [https://gis.ose.state.nm.us/gisapps/ose\\_pod\\_locations/](https://gis.ose.state.nm.us/gisapps/ose_pod_locations/)



Groundwater flow is dominated by a mound northwest of the facility. Groundwater is encountered between 70 and 95 feet below ground surface in two sandstone beds separated by a four-foot-thick shale sequence. Regionally, groundwater should flow to the southwest towards the Pecos River, but the mound's influence has groundwater predominantly flowing towards the southeast at an approximate gradient of 0.0119 to 0.0121 feet per foot. Background water TDS is generally below the 1,000 milligrams per liter New Mexico Water Quality Control Commission's standards.

## 2.5 Regional Aquifer

The High Plains aquifer system is the main source of groundwater in an area extending from Texas and New Mexico north, through the central plains of the US. The far southwestern edge of the Ogallala formation extends into the Maljamar area. The Ogallala generally consists of an unconsolidated and poorly sorted sequence of gravel, sand, silt, and clay. Moderately to well-cemented zones within the Ogallala are resistant to weathering and form ledges in outcrop areas. The most distinctive of these ledges, the Ogallala cap rock, is near the top of the Ogallala in large areas of New Mexico, where it can be as thick as 60 feet.<sup>3</sup>

## 2.6 Facility Lithology

The Maljamar facility is located on the Northwest Shelf of the Permian Basin. Sediments in the area date back to the Cambrian Bliss Sandstone<sup>4</sup>, and overlay Precambrian granites. These late Cambrian transgressive sandstones were the initial deposits within a shallow marine sea that covered most of North America and Greenland. With continued down warping or sea-level rise, a broad, relatively shallow marine basin formed. The Ellenberger Formation (0 – 1000') is dominated by dolostones and limestones that were deposited on a restricted carbonate shelves<sup>5</sup>. Tectonic activity near the end of Ellenberger deposition resulted in subaerial exposure and karstification of these carbonates which increased the unit's overall porosity and permeability.

During Middle to Upper Ordovician time, the seas once again covered the area and deposited the carbonates, sandstones and shales of, first, the Simpson Group (0 – 1000') and then the Montoya Formation (0 – 600'). This is the time period when the Tobosa Basin formed due to the Pedernal uplift and development of the Texas Arch shedding Precambrian crystalline clasts into the basin. Reservoirs in New Mexico are typically within the shoreline sandstones. Another subaerial exposure and karstification event followed the deposition of the Simpson Group. The Montoya Formation marked a return to dominantly carbonate sedimentation with minor siliciclastic sedimentation within the Tobosa Basin<sup>6</sup>. Like the Ellenberger and Simpson carbonates, the subaerial exposure event at the end of Montoya deposition resulted in karstification.

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<sup>3</sup> Ground Water Atlas of the United States, US Geological Survey, Reston VA, 1995

<sup>4</sup> Broadhead, 2017

<sup>5</sup> Broadhead, 2017; Loucks and Kerans, 2019

<sup>6</sup> Broadhead, 2017; Harrington and Loucks, 2019

## 2.7 Precipitation

As may be expected in a desert climate, average annual precipitation near the facility is low, with an average of 15.75 inches of rain and snowfall per year. Figure 1 shows precipitation records for the past century in the Maljamar area.

*Figure 1, Annual Precipitation Historical Records, Hobbs, NM<sup>7</sup>*

Period of Record Monthly Climate Summary													
Period of Record : 12/01/1912 to 05/31/2016													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	56.4	61.8	69.1	78.0	85.7	93.1	93.9	92.4	86.0	77.1	65.2	57.5	76.3
Average Min. Temperature (F)	27.9	31.9	37.6	46.4	55.4	63.6	66.7	65.8	59.3	48.4	36.8	29.4	47.4
Average Total Precipitation (in.)	0.46	0.46	0.54	0.79	1.93	1.85	2.16	2.37	2.54	1.54	0.55	0.55	15.75
Average Total SnowFall (in.)	1.5	1.2	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6	1.0	5.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Flooding does not occur in the high permeability dune sands area surrounding the Maljamar facility. The facility is not located in a flood plain and would not be subject to flooding even in extreme precipitation events. No known flooding of the facility has occurred.

## 2.8 Groundwater Quality

Ground water in the Maljamar area generally contains dissolved sulfate as the principal anion, and local ground water is either a calcium magnesium sulfate or a bicarbonate sulfate type.<sup>8</sup> Calcium concentrations generally range from 100 to 500 milligrams per liter, magnesium concentrations generally range from 50 to 130 milligrams per liter, and sulfate concentrations generally range from 300 to 1,400 milligrams per liter. The water is of similar chemical composition to that in other carbonate-rock aquifers where active dissolution of limestone, dolomite, and gypsum is occurring.

<sup>7</sup> Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)

<sup>8</sup> Ground Water Atlas of the United States, US Geological Survey, Reston VA, 1995.

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### 3.0 Potential and Intentional Discharges

The Maljamar Gas Plant consists of a natural gas treatment plant that is designed to treat natural gas prior to delivery for transportation to markets. There are no intentional discharges of chemicals, process liquids, or stormwater at the facility. Materials that may be stored at the facility are listed in the table below.

Category	Material Name	Solid or Liquid	Type of Container	Estimated Volume	Secondary Containment	Location
Amine Process	Diethanolamine	Liquid	3,000-gallon tank	3,000 gallons	Concrete berm	Process Area
Acids/Caustics	Sodium Hydroxide	Liquid	500 ml glass container	1,000 ml	N/A	Instrument Air Building
	Sulfuric acid	Liquid	500 ml glass container	1,000 ml	N/A	Instrument Air Building
Detergents	Bio-degradable Industrial Detergent, F-20 Low pH	Liquid	400-gallon Poly Tank	400 gallon	Concrete berm	Clark Building
Solvents, inhibitors and degreasers	A-142 Solvent	Liquid	500-gallon tank	500 gallons	Concrete berm	Compressor Building
	A-142 Solvent	Liquid	500-gallon tank	500 gallons	Concrete berm	Clark Building Storage Area
	Methanol	Liquid	2,000-gallon Tank	2,000 gallons	Concrete berm	Process Area
	Methanol	Liquid	500 ml bottle	2,000 ml	N/A	Instrument Air Building
	Methanol	Liquid	500-gallon poly tank	500 gallons	Concrete berm	Southwest corner of Facility
	Defoamer 1017E	Liquid	Drum	100 gallons	Concrete berm	Process Area
	Xylene	Liquid	5-gallon pail	10 gallons	Concrete bottom	Paint Storage Building
	Stoddard Solvent - Parts Washer	Liquid	Parts Washer Vat	15 gallons	Concrete pad	Shop Building
	Orton R-856 Corrosion Inhibitor	Liquid	300-gallon poly tote	300 gallons	Concrete berm	Clark Building Storage Area
	Emulsotron - X711	Liquid	Drum	55 gallons	Metal containment	Raw Product tanks
Oils and Other Products	Lubrication Oil - LSO 32	Liquid	100-gallon tank	100 gallons	Concrete berm	Process area
	Engine Oil	Liquid	500-gallon tank	500 gallons	Concrete berm	Compressor Building

Groundwater Discharge Permit Application  
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Category	Material Name	Solid or Liquid	Type of Container	Estimated Volume	Secondary Containment	Location
Oils and Other Products	Gear Oil - Super EP220	Liquid	4- 25-gallon tanks	100 gallons	Concrete pad	Raw Product Tanks
	Gear Oil - Super EP220	Liquid	Drum	110 gallons	Fiberglass	Drum Storage Area
	SA - 40 Engine Oil	Liquid	6000-gallon tank	600 gallons	Concrete berm	Clark Building Storage Area
	Chevron Oil - ISO 32	Liquid	Drum	55 gallons	Fiberglass	Drum Storage Area
	Chevron Hydraulic Oil - AW ISO 68	Liquid	5-gallon pail	20 gallons	Fiberglass	Drum Storage Area
	Condensate	Liquid	2-300 bbl tanks	600 bbl	Concrete berm	Raw Product Storage Area
	ChemTherm 550	Liquid	Drum	110 gallons	Fiberglass	Drum Storage Area
	Ethylene glycol	Liquid	500-gallon tank	500 gallons	Concrete berm	Compressor Building
	Ethylene glycol	Liquid	500-gallon tank	500 gallons	Concrete berm	Clark Building Storage Area
	Production Water	Liquid	1,000 bbl	1,000 bbl	N/A	North of Process Area
	Molecular Sieves	Solid	2,000 lb Super Sack	10 super sacks	N/A	North of Clark Building
	Waste Amine	Liquid	210 bbl tank	210 bbl	Earthen berm with liner	Process Area
	Produced Waste Water	Liquid	500 bbl tank	500 bbls	Earthen berm with liner	Facility Storage Area
	Waste Oil	Liquid	420 bbl tank	420 bbls	Earthen berm with liner	North of Clark Building
	Methyl purple indicator	Liquid	120 ml amber glass container	120ml	N/A	Instrument Air Building
	Phenolphthalein pH indicator	Liquid	120 ml glass container	120 ml	N/A	Instrument Air Building
	Sodium chloride	Solid	40 lb bags	50 bags	N/A	Water Treatment Storage Building

### 3.1 Waste Handling and Disposal

Oily water and waste oils are stored in tanks in individual tanks in bermed areas prior to being collected and sent through an oil/water separator to remove saleable product and minimize the amount of waste sent for disposal. Recoverable oil is sold to customers, and wastewater is disposed at a permitted OCD Class II disposal well.

Solid wastes are containerized and disposed as needed at the appropriate, OCD-approved disposal facility. Recyclable materials, such as used solvents and oily filters, are recycled through the product vendor or to an approved facility.

Reverse osmosis (RO) wastewater is generated from operation of the reverse osmosis water purification system onsite. The RO system is in place to improve the characteristics of water by removing some dissolved solids inherent in the local drinking water supply. The RO system works by passing facility potable water through a membrane filtration system. The filtered water is then routed to a storage tank for use in facility processes. The amine treatment system requires ultra pure water to ensure that it operates correctly without impacting the equipment. The RO membrane primarily removes entrained calcium from the water to ensure that mineral does not adversely affect process conditions.

RO wastewater is generated during the normal operation of the RO system. The RO system maintains itself by continuously washing down the filtration membrane, thereby keeping it clean and ready for use. Water that has washed down the membranes is called RO wastewater; however, it is technically potable water as the characteristics of the RO wastewater meet EPA-compliant drinking water. This fresh water is discharged to the Conoco Playa Lake, which is privately owned by Conoco and located approximately 1 mile to the south-southeast of the facility. Conoco monitors and maintains the lake as a wildlife refuge in cooperation with the BLM. Water is piped into the lake through a dedicated pipe that is welded to ensure no other source could ever be routed to the outfall. The outfall was sampled annually from approximately 2000 – 2010, with analytical results demonstrating that no contaminants were present in the discharge. Sample results are included as Appendix A.

### 3.2 Drainage Paths and Stormwater Containment Areas

Storm water does not leave the facility boundary and is contained by several mechanisms. Precipitation that reaches the storage vessels is contained within the secondary containment structures. Stormwater that contacts the tanks is contained within the tank's secondary containment structure, and removed by evaporation. Precipitation that collects on the equipment skids is drained with sump systems and plumbed to various onsite tanks until being trucked off site. Precipitation that reaches the ground surface is not in contact with oils or chemicals and remains within facility boundaries since the surface is flat with no discernible sloping. Stormwater typically collects in the center of the facility. There is no evidence of drainage channels, streams, or other water erosion features that would indicate surface water flows out of the facility.

Based on the current and anticipated operations at the Facility, storm water will continue to be contained within the facility boundaries. All ongoing construction projects at the facility will continue to preserve the integrity of the storm water system. Furthermore, the materials storage vessels are and will continue to be located within secondary containment structures that are suitable for containment of the contents of the storage vessels.

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### 3.3 Collection and Storage Systems

Plant operations consist of largely contained processes which may occasionally leak or drip into surrounding containment basins. The facility is designed with an open drain system that consists of buried piping. All secondary containment is piped into the common drainage system, which serves the dehydrator coalescing filters, separator/coalescer skid, glycol regeneration skis, NGL pumps, process skid, residue compressors, air compressors, mol sieve dehydration, and amine treatment unit.

Liquids drain to a common sump tank, which is hauled as needed for disposal. The sump tank is bermed using an impervious metal wall containment system. Underground piping consists of new steel pipes that are coated, wrapped and cathodically protected.

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## 4.0 Inspection, Maintenance, and Reporting

The facility is manned continuously and inspected daily. Routine duties include checking equipment for leaks or conditions that may lead to a release. Plant personnel act responsibly to avoid spills and leaks that may harm the environment and result in wasted product and lost revenue. Housekeeping measures require prompt identification and correction of leaks, drips, and spills. Maintenance activities are scheduled as needed to prevent releases of process fluids or other industrial materials.

### 4.1 Proposed Modifications

No modifications to current systems are proposed.

## 5.0 Contingency Plan for Releases

Prevention is key for eliminating discharges and associated risks of spills. The following procedures will be followed for spill prevention. The first line of defense is to educate and train operating personnel to assure reduction in human error and in the availability and use of pollution prevention equipment.

1. The plant supervisor or his designee will inspect the facility on a regular basis, noting the condition of any dikes, valves, lines, tanks or other equipment that may need repair or replacement on the daily report. Immediately, orally report to the operations supervisor any spills, leaks or any other circumstances requiring immediate action and noting the report on the daily report. These inspections are to be part of the regular visitations to the facility. Daily reports will be maintained for three years.
2. Any leaks or spills shall be reported to all proper agencies and a record of those reports shall be kept in the facility file.
3. All repairs and needed maintenance will be made to avoid discharge events. All major changes, repairs and replacements will be reported facility plans will be modified accordingly.

The second line of defense is secondary containment, where appropriate, to prevent any accidental discharge from reaching navigable waters. Where secondary containment is not practical an oil spill contingency plan, including management's support of and commitment to, have been adopted. The plan discusses the necessary manpower and materials for mobilization to initiate immediate cleanup of a spill.

Contingency plans will be maintained, and revised as changes in facility design, construction, operation, or maintenance occur that materially affect the facilities potential to discharge oil in quantities that may be harmful. The personnel responsible for all training, revisions, and updates concerning this plan are the company Environmental Engineer and the Environmental Coordinator.

Any person observing a spill or receiving a spill notice will notify company personnel as soon as possible.

All information concerning the spill should be relayed as accurately and concisely as possible. If applicable, specific instructions will be issued to the reporting employee concerning containment and cleanup operations in regard to the spill. Obvious steps should be taken to stop or minimize the volume of the spill. Make sure all steps taken are in accordance with good safety practices.

### 5.1 Internal Alert Procedure

This alert procedure becomes effective immediately upon the observation of a reportable oil spill at any company facility. The information should include:

- Exact lease name and location, and if applicable, address and telephone number of facility.
- The spill date and time.
- The type of material spilled.



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- Estimates of the total quantity spilled.
- Estimates of the quantity spilled into navigable waters.
- The source and cause of the spill.
- A description of the affected medium (air, water and soil).
- Any damages or injuries caused by the spill.
- Actions being used to stop, remove and mitigate the effects of the discharge.
- Whether an evacuation may be needed.
- Names of individuals and/or organizations who have also been contacted.

## 5.2 External Alert Procedure

The non-company agencies listed below will be notified as appropriate.

<b><u>SPILL TYPE</u></b>	<b><u>AGENCIES TO BE NOTIFIED</u></b>
Threatens water Call First	National Response Center-NRC 1-(800) 424-8802
Enters navigable waters	Environmental Protection Agency-EPA (214) 665-2222 (24 Hours)
Hazardous Substances Over RQ or EHS's	State Emergency Response (505) 827-9226 Local Emergency Planning Commission (LEPC) Chaves County (505) 624-6770 Lea County (505) 397-3636 Eddy County (505) 885-2111
Report all spills via the OCD's e-Permitting System on Form C-141, and verbally if necessary	New Mexico Oil Conservation Division (575) 241-7063 Hobbs (505) 629-6116 Artesia (575) 626-0830 After Hours
Report per "Guidelines for Reporting Breaks, Spills, or Leaks	Bureau of Land Management (BLM) (505) 235-5972 or 234-5904 Carlsbad (505) 627-0272 or 627-0275 Roswell

## 5.3 Immediate Action

If a spill occurs, a company employee will eliminate the spill source by closing valves and any other measures as practical and determine the type and extent of spill.

Contract personnel and equipment will be dispatched to the spill area with material necessary to initiate a clean-up program.

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#### 5.4 Containment and Cleanup

Containment of an oil spill will be accomplished by building an earthen dam or excavating a pit, if necessary, at such a location that utilization of natural drainage patterns will afford the most efficient entrapment. If a spill reaches navigable waters, the spill will be contained by booms, if possible, and operations will be put into place to recover the oil with mechanical skimmers, sorbets, or suction equipment.

The trapped materials will be reclaimed by removing released materials, storage of debris in a weatherproof enclosure, and transported for disposal, as appropriate. Removal and disposal of discharged fluid or contaminated soil must be in compliance with state and EPA regulations. The facility and spill area will then be restored to normal and corrective action taken to eliminate a reoccurrence.

#### 5.5 Manpower, Equipment, and Resources

Company personnel directly responsible for reporting, first response, and cleanup include:

- Plant Operator,
- Plant Supervisor,
- Operations Manager,
- Environmental Engineer, and
- Environmental Coordinator.

Company spill response equipment includes office materials, vehicles, and computers/telephones for communications.

Contract personnel on call for spill response include:

- First available trucking company with vacuum trucks.
- First available service company with dump trucks and backhoe.
- First available service company with roustabout crews.
- Local safety-oriented company, if applicable.

The first company employee in a supervisory capacity, that receives notification, shall insure that action has been initiated to mobilize, contain and cleanup operations.

## 6.0 Public Notice

Locations for signs with a synopsis of the public notice in Spanish and in English to be posted include the Maljamar Plant Office, and at the US Post Office in Maljamar. Property owners within 0.3 miles of the facility will be notified in writing via mail. The notice will also be published in the local newspaper, the Hobbs News-Sun. Proof of the publications and notices will be provided to the NMOCD within 15 days of completion. Text of the public notice is detailed below.

### PUBLIC NOTICE

Frontier Field Services, LLC has submitted an application to the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division for issuance of a discharge plan permit (GW-20) for their Maljamar Gas Plant located in the Unit N (SE 1/4, SW 1/4) of Section 21, Township 17 South, Range 32 East in Lea County, New Mexico. The physical address of the facility is 1001 Conoco Road, Maljamar, New Mexico, 88260. The facility is located approximately 3 miles south of Maljamar, New Mexico.

The facility processes natural gas that is transferred to the facility from various fields in a pipeline gathering system. The facility is a 90 MMcfd cryogenic gas plant and gathering system. The facility utilizes a cryogenic process to remove simple alkanes (i.e. ethane, propane, pentane and hexane) from natural gas and third party y-grade (liquid hydrocarbons). The unprocessed material is transported to the facility via pipelines. The gas is compressed and sent to an amine system to remove carbon dioxide and hydrogen sulfide, dehydrated and cooled. Natural gas liquid and residue gas products leave the facility by means of pipelines. The facility uses scrubbers, exchangers, separators, chillers, flash tanks, and compressors for the various processes. The end products, residue gas and natural gas liquids, are sold to various Petroleum based companies.

Approximately 3,000 barrels (bbl) of wastewater from wash down, pressure separators, scrubbers, and slug catchers is generated monthly and sent off site to a third party. Approximately 200 bbl of spent amine and water is collected each month in the amine waste tank and disposed off site in an OCD approved Class II well. Approximately 300 bbl of wastewater from the reverse osmosis backflush is discharged into the ConocoPhillips Playa Lake. Approximately 15 gallons of Stoddard solvent is generated in the parts washer and recycled off site by the product vendor. Approximately 3,000 bbl of waste oil, including engine, gear and lubricating oil, is collected in the dirty slop oil tank and disposed off site in an OCD approved Class II well. All storage tanks are within properly engineered secondary containments.

The High Plains aquifer is the most likely to be affected and is approximately 70 and 95 feet below ground surface in two sandstone beds separated by a four-foot thick shale sequence. The total dissolved solids concentration of the primary aquifer is below the 1,000 mg/l NM WQCC standard.

The OCD contact by which interested parties may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices is Shelly Wells, 505-469-7520, [Shelly.Wells@emnrd.nm.gov](mailto:Shelly.Wells@emnrd.nm.gov). The OCD mailing address is 1220 South St. Francis Drive, Santa

Groundwater Discharge Permit Application  
Maljamar Gas Plant

May 22, 2023

Fe, New Mexico, 87505. The OCD will accept comments and statements of interest regarding the discharge permit application and will create a facility-specific mailing list for persons who wish to receive future notices.”

#### NOTICIA PÚBLICA

Frontier Field Services, LLC ha presentado una solicitud a la División de Conservación de Petróleo del Departamento de Energía, Minerales y Recursos Naturales de Nuevo México para la emisión de un permiso de plan de descarga (GW-20) para su Maljamar Gas Planta ubicada en la Unidad N (SE 1/4, SW 1/4) de la Sección 21, Municipio 17 Sur, Rango 32 Este en el condado de Lea, Nuevo México. La dirección física de la instalación es 1001 Conoco Road, Maljamar, Nuevo México, 88260. La instalación está ubicada aproximadamente a 3 millas al sur de Maljamar, Nuevo México.

La instalación procesa gas natural que se transfiere a la instalación desde varios campos en un sistema de recolección de tuberías. La instalación es una planta de gas criogénico y un sistema de recolección de 90 MMcfd. La instalación utiliza un proceso criogénico para eliminar alcanos simples (es decir, etano, propano, pentano y hexano) del gas natural y grado Y de terceros (hidrocarburos líquidos). El material sin procesar se transporta a la instalación a través de tuberías. El gas se comprime y se envía a un sistema de amina para eliminar el dióxido de carbono y el sulfuro de hidrógeno, deshidratarlo y enfriarlo. Los productos de gas natural líquido y gas residual salen de la instalación a través de tuberías. La instalación utiliza depuradores, intercambiadores, separadores, enfriadores, tanques de expansión y compresores para los diversos procesos. Los productos finales, gas residual y líquidos de gas natural, se venden a varias empresas petroleras.

Aproximadamente 3000 barriles (bbl) de aguas residuales de lavado, separadores de presión, depuradores y colectores de babosas se generan mensualmente y se envían fuera del sitio a un tercero. Aproximadamente 200 bbl de amina gastada y agua se recolectan cada mes en el tanque de desechos de amina y se desechan fuera del sitio en un pozo Clase II aprobado por OCD. Aproximadamente 300 bbl de aguas residuales del retrolavado de ósmosis inversa se descargan en el lago ConocoPhillips Playa. Aproximadamente 15 galones de solvente Stoddard se generan en la lavadora de piezas y una empresa comercial los desecha fuera del sitio. Aproximadamente 3000 bbl de aceite de desecho, incluido el aceite de motor, de engranajes y lubricante, se recolectan en el tanque de aceite de desecho sucio y se eliminan fuera del sitio en un pozo Clase II aprobado por OCD. Todos los tanques de almacenamiento están dentro de contenedores secundarios debidamente diseñados.

El acuífero de High Plains es el más probable que se vea afectado y se encuentra aproximadamente a 70 y 95 pies por debajo de la superficie del suelo en dos lechos de arenisca separados por una secuencia de esquisto de cuatro pies de espesor. La concentración total de sólidos disueltos del acuífero primario está por debajo del estándar WQCC de 1000 mg/l NM.

El contacto de OCD a través del cual las partes interesadas pueden obtener información, enviar comentarios y solicitar que se les incluya en una lista de correo específica de la instalación para futuros avisos es Shelly Wells, 505-469-7520, Shelly.Wells@emnrd.nm.gov. La dirección postal de la OCD es 1220 South St. Francis Drive, Santa Fe, New Mexico, 87505. La OCD aceptará comentarios y declaraciones de interés con respecto a la solicitud de permiso de descarga y creará una lista de correo específica de la instalación para las personas que deseen recibir información en el futuro avisos.

## 7.0 Facility Closure/Post Closure Plan

Upon permanent cessation of facility operations by Frontier Field Services, a closure plan to prevent the exceedance of standards of 20.6.2.3103 NMAC in groundwater will be enacted. The closure plan will consist of removing materials associated with gas plant operations which pose a potential risk of polluting surface or groundwater. Elements of this closure plan are detailed below.

### 7.1 Facility Closure Preparation

Initial closure activities will be to remove unused drummed or containerized products onsite that are used in the facility processes or supporting activities. Drummed products include but are not limited to containers of lube oils, amine solution, triethylene glycol, degreasers, and cleaning products. Unused products will be returned to vendors or relocated to operational facilities for beneficial use.

Solid wastes collected onsite will also be inventoried, packaged for shipment, and disposed in a manner consistent with their waste type. Oily filters will be sent offsite for recycling. Used solvent will be returned to the vendor (SafetyKleen). Office or non-industrial trash will be shipped offsite to a municipal landfill. Empty product containers will be returned to the vendor (preferred method) or disposed according to the proper handling protocol associated with each container.

After properly handling useful products and solid waste materials, decommissioning of equipment and disposal of liquid wastes will begin. Equipment storing hydrocarbon materials will be blind-flanged, then steam and/or pressure-washed to remove any traces of hydrocarbons that could leak into soils or come into contact with precipitation. Alternatively, equipment may be disassembled and removed from site for beneficial use at a new location. Secondary containment structures that remain onsite will be steam and/or pressure washed. Resulting liquid waste will be routed to the facility sump, then slop water storage tanks.

When all process equipment has been removed or cleaned, the facility sump system will be washed down and purged to the slop water storage tanks. Slop water liquids will be trucked out for disposal via an injection well. After all cleaning and purging activities are completed, the facility sump system will be isolated via coverings on equipment skids and blind flanging the slop water tanks. Slop water tanks will also be emptied and cleaned.

**Estimated costs for facility closure preparation: \$32,900**

### 7.2 Site Decommissioning

Decommissioning activities will consist primarily of removal of equipment and disposal of non-reusable items. As with other products at the facility, beneficial reuse is the preferred handling method for used equipment. The process equipment, including dehydrators and associated vessels, amine system with heaters, and cryogenic tower and associated vessels, flares, pumps, and remaining equipment will be disassembled and either sold or relocated to an operating site and returned to service. Compressors and associated engines will be removed and returned to the equipment vendor's operating fleet.

Above ground piping will be removed and sold for scrap metal. Underground piping will be excavated and also sold for scrap. Office and warehouse buildings will be sold, dismantled, and moved offsite.

Miscellaneous debris, including fencing, office items, or spare parts will be shipped to a landfill that accepts non-hazardous industrial wastes, such as Lea Land.

**Estimated costs for facility decommissioning: \$259,000**

### 7.3 Site Environmental Assessment and Remediation Activities

During the decommissioning process, the facility will be investigated for indicators of environmental impacts from operations. Known environmental conditions at the facility include an ongoing groundwater remediation project for petroleum hydrocarbons and chlorides in the near-surface water bearing zone. This project is the responsibility of ConocoPhillips, the previous facility owner. All costs associated with ongoing groundwater monitoring and remediation, including closure of the groundwater monitoring wells, will remain with ConocoPhillips.

Given that impacts to the nearby groundwater have been detected, it is likely that impacted soils exist beneath the facility as well. The extent and concentration of impacts are unknown; however, as part of the facility closure investigation, delineation of the extent of impacts will be performed. Prior to sample collection, any areas of visibly stained soil will be excavated and containerized for characterization and appropriate handling. After initial cleanup activities (if needed), samples will be collected across the facility and evaluated for TPH and chlorides. Samples will be collected both from the surface and from depths to evaluate if sources of pollutants remain in the subsurface, possibly contributing to groundwater quality issues.

After completing delineation of any soil impacts, Durango will collaborate with the NMOCD on a closure plan for the facility. Given the age and lengthy operating history of the facility, any cleanup project would likely be complex and require engineering solutions to address historical issues. Sampling and development of a site closure plan, including implementing the plan, is estimated based on an in-situ treatment program and is likely to involve site-specific chlorides standards, and natural attenuation of any petroleum hydrocarbon impacts.

**Estimated costs for assessment and remediation: \$450,000**

### 7.4 Site Reclamation

When sampling verifies that remediation activities have been completed to the appropriate landowner and regulatory standards, the reclamation process will be initiated. Steps in the reclamation process include soil management and revegetation.

Soil management will include excavation and removal of ground hardening materials such as caliche or gravel, to return the site to native soils. Where the removal of paving materials creates major pits or depressions, topsoil backfill will be applied as needed. Areas that have been excavated may require soil stabilization activities such as mechanical packing to consolidate loose soils. Topography of the land surrounding the Maljamar Gas Plant is generally flat, with a gentle slope from the northeast to the southwest. The site will be regraded to match the naturally occurring topography.

The soil in the Maljamar area is a silty sand with relatively high permeability. It also is somewhat non-cohesive and contains a low percentage of coarse fragments near the surface. While the soil will absorb some precipitation and pass it as interflow, high intensity, short duration storms could produce

Groundwater Discharge Permit Application  
Maljamar Gas Plant

May 22, 2023

sediment transport. Over most of the Maljamar site, a 100-year, 24-hour storm event should result in manageable sheet flow, with limited tendency to produce rilling or gullies. Steeper areas near the compressor building on the northeast corner of the site and near the Clark Compressor could result in erosive action during a high-intensity, short-duration storm event. Therefore, erosion control measures will be taken in these areas to prevent sediment transport.

After completing the soil stabilization and contouring activities, the site will be prepared for revegetation. If needed, seed bed preparation activities such as tilling or mulching will be done prior to seeding. The Maljamar Gas Plant is located in the Querecho Plains, which is covered almost entirely by dune sand which is stable or semi-stable over most of the area, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of several playas. The sand is generally underlain by recent alluvium but in several places the sand forms topographic highs where it is underlain by a caliche surface. The predominant flora in vegetated areas are shrubs and grasses. Grasses include purple three-awn (*Aristida purpurea*), black grama (*Bouteloua eriopoda*), and sideoats grama (*Bouteloua curtipendula*). Common shrubs include yucca and sagebrush (*Artemisia tridentata*). A seed mix representative of surrounding areas will be prepared and applied.

The seeded land will be monitored on a monthly basis to ensure progress towards completing revegetation. Watering may be conducted to enhance or accelerate growth. The expected duration of monitoring and maintenance to restore native conditions is two growing seasons. Costs to completely restore the land may be highly variable depending on the amount of soils moved, watering required, and success of revegetation.

**Estimated cost for revegetation activities: \$340,000**

**Total costs for facility shutdown through site restoration are estimated at \$1,081,900.**

Groundwater Discharge Permit Application  
Maljamar Gas Plant

May 22, 2023

## 8.0 Certification

I hereby certify that the information submitted with this application is true, accurate, and complete to the best of my knowledge and belief.



Signed

Rebecca Moore

Name

May 22, 2023

Date

Durango Midstream

Company



Groundwater Discharge Permit Application  
Maljamar Gas Plant

May 22, 2023

## **Appendix A**

# Analytical Report 391999

## for Frontier Field Services

**Project Manager: Steve Maker**

**Playa Lake Discharge**

**11-OCT-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



11-OCT-10

Project Manager: **Steve Maker**  
**Frontier Field Services**  
1001 Conoco Road

Maljamar, NM 88264

Reference: XENCO Report No: **391999**  
**Playa Lake Discharge**  
Project Address: Maljamar, NM

**Steve Maker:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 391999. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 391999 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.**Certified and approved by numerous States and Agencies.**A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 391999

Frontier Field Services, Maljamar, NM

Playa Lake Discharge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
R.O. Unit System	W	Sep-30-10 11:45		391999-001



## CASE NARRATIVE

*Client Name: Frontier Field Services*

*Project Name: Playa Lake Discharge*



*Project ID:*  
*Work Order Number: 391999*

*Report Date: 11-OCT-10*  
*Date Received: 09/30/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-825904 TCLP Mercury by SW 7470A  
SW7470A

Batch 825904, Mercury recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 391999-001.

The Laboratory Control Sample for Mercury is within laboratory Control Limits

Batch: LBA-826110 TCLP Metals by SW 6020A  
SW6020

Batch 826110, Arsenic RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 391999-001.

Batch: LBA-826210 VOAs by SW-846 8260B  
SW8260B

Batch 826210, MTBE recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 391999-001.

The Laboratory Control Sample for MTBE is within laboratory Control Limits

Methylene chloride is probably laboratory contamination in 391750 , 391917 , and 391999 .



# Certificate of Analysis Summary 391999

Frontier Field Services, Maljamar, NM  
Project Name: Playa Lake Discharge



Project Id:  
Contact: Steve Maker  
Project Location: Maljamar, NM

Date Received in Lab: Thu Sep-30-10 04:00 pm  
Report Date: 11-OCT-10  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:		391999-001 R.O. Unit System			
	Field Id:	Depth:				
	Matrix:		WATER			
	Sampled:		Sep-30-10 11:45			
TCLP Mercury by SW 7470A	Extracted:		Oct-04-10 08:15			
	Analyzed:		Oct-04-10 11:45			
	Units/RL:		mg/L RL			
Mercury			ND 0.0003			
TCLP Metals by SW 6020A SUB: T104704215-TX	Extracted:		Oct-05-10 09:50			
	Analyzed:		Oct-05-10 19:04			
	Units/RL:		mg/L RL			
Antimony			ND 0.030			
Arsenic			0.013 0.010			
Barium			ND 0.025			
Beryllium			ND 0.0050			
Cadmium			ND 0.005			
Chromium			ND 0.015			
Lead			ND 0.010			
Nickel			ND 0.025			
Selenium			ND 0.015			
Silver			ND 0.010			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

# Certificate of Analysis Summary 391999

## Frontier Field Services, Maljamar, NM

### Project Name: Playa Lake Discharge



Project Id:  
Contact: Steve Maker  
Project Location: Maljamar, NM

Date Received in Lab: Thu Sep-30-10 04:00 pm  
Report Date: 11-OCT-10  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:		391999-001 R.O. Unit System			
	Field Id:	Depth:				
	Matrix:		WATER			
	Sampled:		Sep-30-10 11:45			
VOAs by SW-846 8260B	Extracted:		Oct-05-10 16:42			
	Analyzed:		Oct-05-10 18:12			
	Units/RL:		mg/L RL			
1,1,1,2-Tetrachloroethane			ND 0.005			
1,1,1-Trichloroethane			ND 0.005			
1,1,2,2-Tetrachloroethane			ND 0.005			
1,1,2-Trichloroethane			ND 0.005			
1,1-Dichloroethane			ND 0.005			
1,1-Dichloroethene			ND 0.005			
1,1-Dichloropropene			ND 0.005			
1,2,3-Trichlorobenzene			ND 0.005			
1,2,3-Trichloropropane			ND 0.005			
1,2,4-Trichlorobenzene			ND 0.005			
1,2,4-Trimethylbenzene			ND 0.005			
1,2-Dibromo-3-Chloropropane			ND 0.005			
1,2-Dibromoethane			ND 0.005			
1,2-Dichlorobenzene			ND 0.005			
1,2-Dichloroethane			ND 0.005			
1,2-Dichloropropane			ND 0.005			
1,3,5-Trimethylbenzene			ND 0.005			
1,3-Dichlorobenzene			ND 0.005			
1,3-Dichloropropane			ND 0.005			
1,4-Dichlorobenzene			ND 0.005			
2,2-Dichloropropane			ND 0.005			
2-Chlorotoluene			ND 0.005			
4-Chlorotoluene			ND 0.005			
Benzene			ND 0.005			
Bromobenzene			ND 0.005			

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Brent Barron, II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 391999

## Frontier Field Services, Maljamar, NM

### Project Name: Playa Lake Discharge



Project Id:  
Contact: Steve Maker  
Project Location: Maljamar, NM

Date Received in Lab: Thu Sep-30-10 04:00 pm  
Report Date: 11-OCT-10  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:		391999-001 R.O. Unit System	WATER Sep-30-10 11:45
	Field Id:	Depth:		
VOAs by SW-846 8260B	Matrix:			
	Sampled:			
	Extracted:	Oct-05-10 16:42		
	Analyzed:	Oct-05-10 18:12		
	Units/RL:	mg/L RL		
Bromochloromethane			ND 0.005	
Bromodichloromethane			ND 0.005	
Bromoform			0.012 0.005	
Bromomethane			ND 0.005	
Carbon Tetrachloride			ND 0.005	
Chlorobenzene			ND 0.005	
Chloroethane			ND 0.010	
Chloroform			ND 0.005	
Chloromethane			ND 0.010	
cis-1,2-Dichloroethene			ND 0.005	
cis-1,3-Dichloropropene			ND 0.005	
Dibromochloromethane			ND 0.005	
Dibromomethane			ND 0.005	
Dichlorodifluoromethane			ND 0.005	
Ethylbenzene			ND 0.005	
Hexachlorobutadiene			ND 0.005	
isopropylbenzene			ND 0.005	
m,p-Xylenes			ND 0.010	
Methylene Chloride			0.013 0.005	
MTBE			ND 0.005	
Naphthalene			ND 0.010	
n-Butylbenzene			ND 0.005	
n-Propylbenzene			ND 0.005	
o-Xylene			ND 0.005	
p-Cymene (p-Isopropyltoluene)			ND 0.005	

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Brent Barron, II  
Odessa Laboratory Manager





# Certificate of Analysis Summary 391999

Frontier Field Services, Maljamar, NM  
Project Name: Playa Lake Discharge



Project Id:  
Contact: Steve Maker  
Project Location: Maljamar, NM

Date Received in Lab: Thu Sep-30-10 04:00 pm  
Report Date: 11-OCT-10  
Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	391999-001			
	Field Id:	R.O. Unit System			
	Depth:				
	Matrix:	WATER			
	Sampled:	Sep-30-10 11:45			
VOAs by SW-846 8260B	Extracted:	Oct-05-10 16:42			
	Analyzed:	Oct-05-10 18:12			
	Units/RL:	mg/L RL			
	Sec-Butylbenzene	ND 0.005			
	Styrene	ND 0.005			
Tetrachloroethylene	tert-Butylbenzene	ND 0.005			
	Toluene	ND 0.005			
	trans-1,2-dichloroethene	ND 0.005			
	trans-1,3-dichloropropene	ND 0.005			
	Trichloroethene	ND 0.005			
Trichlorofluoromethane	Trichlorofluoromethane	ND 0.005			
	Vinyl Chloride	ND 0.002			

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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# Form 2 - Surrogate Recoveries

Project Name: Playa Lake Discharge

Work Orders : 391999,

Project ID:

Lab Batch #: 826210

Sample: 575264-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/05/10 11:02

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0483	0.0500	97	74-124	
Dibromofluoromethane	0.0485	0.0500	97	75-131	
1,2-Dichloroethane-D4	0.0515	0.0500	103	63-144	
Toluene-D8	0.0502	0.0500	100	80-117	

Lab Batch #: 826210

Sample: 575264-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/05/10 12:06

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0488	0.0500	98	74-124	
Dibromofluoromethane	0.0518	0.0500	104	75-131	
1,2-Dichloroethane-D4	0.0514	0.0500	103	63-144	
Toluene-D8	0.0488	0.0500	98	80-117	

Lab Batch #: 826210

Sample: 392103-007 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/05/10 12:49

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0501	0.0500	100	74-124	
Dibromofluoromethane	0.0499	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0490	0.0500	98	63-144	
Toluene-D8	0.0490	0.0500	98	80-117	

Lab Batch #: 826210

Sample: 392103-007 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/05/10 13:10

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0505	0.0500	101	74-124	
Dibromofluoromethane	0.0502	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0492	0.0500	98	63-144	
Toluene-D8	0.0494	0.0500	99	80-117	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.

**Form 2 - Surrogate Recoveries****Project Name: Playa Lake Discharge****Work Orders :** 391999,**Lab Batch #:** 826210**Sample:** 391999-001 / SMP**Project ID:****Batch:** 1 **Matrix:** Water**Units:** mg/L**Date Analyzed:** 10/05/10 18:12**SURROGATE RECOVERY STUDY**

<b>VOAs by SW-846 8260B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
4-Bromofluorobenzene	0.0484	0.0500	97	74-124	
Dibromofluoromethane	0.0509	0.0500	102	75-131	
1,2-Dichloroethane-D4	0.0505	0.0500	101	63-144	
Toluene-D8	0.0475	0.0500	95	80-117	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$ 

All results are based on MDL and validated for QC purposes.

# Blank Spike Recovery

Project Name: Playa Lake Discharge

Work Order #: 391999

Project ID:

Lab Batch #: 826110

Sample: 575156-1-BKS

Matrix: Water

Date Analyzed: 10/05/2010

Date Prepared: 10/05/2010

Analyst: HAT

Reporting Units: mg/L

Batch #: 1

## BLANK/BLANK SPIKE RECOVERY STUDY

TCLP Metals by SW 6020A Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Antimony	ND	0.020	0.020	100	75-125	
Arsenic	ND	0.050	0.047	94	75-125	
Barium	ND	0.050	0.046	92	75-125	
Beryllium	ND	0.0200	0.0172	86	75-125	
Cadmium	ND	0.020	0.018	90	75-125	
Chromium	ND	0.050	0.052	104	75-125	
Lead	ND	0.050	0.046	92	75-125	
Nickel	ND	0.050	0.047	94	75-125	
Selenium	ND	0.050	0.044	88	75-125	
Silver	ND	0.020	0.018	90	75-125	

Blank Spike Recovery [D] =  $100 \times [C] / [B]$

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

## Project Name: Playa Lake Discharge

Work Order #: 391999

Project ID:

Lab Batch #: 826210

Sample: 575264-1-BKS

Matrix: Water

Date Analyzed: 10/05/2010

Date Prepared: 10/05/2010

Analyst: CYE

Reporting Units: mg/L

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Analytes						
1,1,1,2-Tetrachloroethane	ND	0.050	0.049	98	75-125	
1,1,1-Trichloroethane	ND	0.050	0.047	94	75-125	
1,1,2,2-Tetrachloroethane	ND	0.050	0.050	100	50-130	
1,1,2-Trichloroethane	ND	0.050	0.050	100	75-127	
1,1-Dichloroethane	ND	0.050	0.051	102	60-130	
1,1-Dichloroethene	ND	0.050	0.046	92	59-172	
1,1-Dichloropropene	ND	0.050	0.040	80	75-125	
1,2,3-Trichlorobenzene	ND	0.050	0.053	106	75-137	
1,2,3-Trichloropropane	ND	0.050	0.051	102	75-125	
1,2,4-Trichlorobenzene	ND	0.050	0.052	104	75-135	
1,2,4-Trimethylbenzene	ND	0.050	0.053	106	75-125	
1,2-Dibromo-3-Chloropropane	ND	0.050	0.047	94	59-125	
1,2-Dibromoethane	ND	0.050	0.049	98	73-125	
1,2-Dichlorobenzene	ND	0.050	0.050	100	75-125	
1,2-Dichloroethane	ND	0.050	0.048	96	68-127	
1,2-Dichloropropane	ND	0.050	0.049	98	74-125	
1,3,5-Trimethylbenzene	ND	0.050	0.052	104	70-125	
1,3-Dichlorobenzene	ND	0.050	0.051	102	75-125	
1,3-Dichloropropane	ND	0.050	0.049	98	75-125	
1,4-Dichlorobenzene	ND	0.050	0.048	96	75-125	
2,2-Dichloropropane	ND	0.050	0.047	94	60-140	
2-Chlorotoluene	ND	0.050	0.050	100	73-125	
4-Chlorotoluene	ND	0.050	0.050	100	74-125	
Benzene	ND	0.050	0.048	96	66-142	
Bromobenzene	ND	0.050	0.049	98	60-130	
Bromochloromethane	ND	0.050	0.047	94	73-125	
Bromodichloromethane	ND	0.050	0.048	96	75-125	
Bromoform	ND	0.050	0.043	86	75-125	
Bromomethane	ND	0.050	0.043	86	70-130	
Carbon Tetrachloride	ND	0.050	0.047	94	62-125	
Chlorobenzene	ND	0.050	0.049	98	60-133	
Chloroethane	ND	0.050	0.041	82	70-130	
Chloroform	ND	0.050	0.048	96	74-125	

Blank Spike Recovery [D] =  $100 \times [C]/[B]$ 

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

## Project Name: Playa Lake Discharge

Work Order #: 391999

Project ID:

Lab Batch #: 826210

Sample: 575264-1-BKS

Matrix: Water

Date Analyzed: 10/05/2010

Date Prepared: 10/05/2010

Analyst: CYE

Reporting Units: mg/L

Batch #: 1

## BLANK/BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloromethane	ND	0.050	0.047	94	70-130	
cis-1,2-Dichloroethene	ND	0.050	0.049	98	60-130	
cis-1,3-Dichloropropene	ND	0.050	0.051	102	60-140	
Dibromochloromethane	ND	0.050	0.046	92	60-130	
Dibromomethane	ND	0.050	0.050	100	69-127	
Dichlorodifluoromethane	ND	0.050	0.057	114	70-130	
Ethylbenzene	ND	0.050	0.050	100	75-125	
Hexachlorobutadiene	ND	0.050	0.051	102	75-125	
isopropylbenzene	ND	0.050	0.051	102	75-125	
m,p-Xylenes	ND	0.100	0.101	101	75-125	
Methylene Chloride	ND	0.050	0.048	96	75-125	
MTBE	ND	0.050	0.049	98	75-125	
Naphthalene	ND	0.050	0.057	114	65-135	
n-Butylbenzene	ND	0.050	0.053	106	75-125	
n-Propylbenzene	ND	0.050	0.051	102	75-125	
o-Xylene	ND	0.050	0.052	104	75-125	
p-Cymene (p-Isopropyltoluene)	ND	0.050	0.055	110	75-125	
Sec-Butylbenzene	ND	0.050	0.053	106	75-125	
Styrene	ND	0.050	0.053	106	60-130	
tert-Butylbenzene	ND	0.050	0.054	108	75-125	
Tetrachloroethylene	ND	0.050	0.048	96	60-130	
Toluene	ND	0.050	0.047	94	59-139	
trans-1,2-dichloroethene	ND	0.050	0.046	92	60-130	
trans-1,3-dichloropropene	ND	0.050	0.049	98	66-125	
Trichloroethene	ND	0.050	0.049	98	62-137	
Trichlorofluoromethane	ND	0.050	0.050	100	67-125	
Vinyl Chloride	ND	0.050	0.049	98	75-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit





# BS / BSD Recoveries



Project Name: Playa Lake Discharge

Work Order #: 391999

Analyst: LATCOR

Lab Batch ID: 825904

Sample: 575076-1-BKS

Date Prepared: 10/04/2010

Batch #: 1

Project ID:

Date Analyzed: 10/04/2010

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L											
TCLP Mercury by SW 7470A											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	ND	0.0010	0.0008	80	0.001	0.0009	90	12	75-125	20	

Relative Percent Difference  $RPD = 200 * [(C-F)/(C+F)]$   
Blank Spike Recovery  $[D] = 100 * (C)/[B]$   
Blank Spike Duplicate Recovery  $[G] = 100 * (F)/[E]$   
All results are based on MDL and Validated for QC Purposes





# Form 3 - MS / MSD Recoveries

Project Name: Playa Lake Discharge



Work Order #: 391999

Lab Batch ID: 825904

Date Analyzed: 10/04/2010

Reporting Units: mg/L

Project ID:

QC- Sample ID: 391927-001 S Batch #: 1 Matrix: Water

Date Prepared: 10/04/2010 Analyst: LATCOR

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/L	TCLP Mercury by SW 7470A	Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
			ND	0.0010	0.0009	90	0.0010	0.0009	90	0	75-125	20	
	Mercury												

Lab Batch ID: 826110

Date Analyzed: 10/05/2010

Reporting Units: mg/L

QC- Sample ID: 391773-001 S Batch #: 1 Matrix: Solid

Date Prepared: 10/05/2010 Analyst: HAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Reporting Units: mg/L	TCLP Metals by SW 6020A  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
		Antimony	ND	0.100	0.097	97	0.100	0.099	99	2	75-125	25	
		Arsenic	0.015	0.250	0.255	96	0.250	0.260	98	2	75-125	25	
		Barium	2.24	0.250	2.51	108	0.250	2.54	120	1	75-125	25	
		Beryllium	ND	0.1000	0.0965	97	0.1000	0.0955	96	1	75-125	25	
		Cadmium	ND	0.100	0.089	89	0.100	0.089	89	0	75-125	25	
		Chromium	ND	0.250	0.263	105	0.250	0.261	104	1	75-125	25	
		Lead	ND	0.250	0.240	96	0.250	0.239	96	0	75-125	25	
		Nickel	0.081	0.250	0.318	95	0.250	0.317	94	0	75-125	25	
		Selenium	ND	0.250	0.230	92	0.250	0.237	95	3	75-125	25	
		Silver	ND	0.100	0.087	87	0.100	0.086	86	1	75-125	25	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times [(C-F)/(C+E)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Form 3 - MS / MSD Recoveries

Project Name: Playa Lake Discharge



Work Order #: 391999

Lab Batch ID: 826210

Date Analyzed: 10/05/2010

Reporting Units: mg/L

Project ID:

QC- Sample ID: 392103-007 S

Batch #: 1 Matrix: Water

Date Prepared: 10/05/2010

Analyst: CYE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Reporting Units: mg/L	VOAs by SW-846 8260B  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	1,1,1,2-Tetrachloroethane	ND	0.050	0.046	92	0.050	0.048	96	4	75-125	20	
	1,1,1-Trichloroethane	ND	0.050	0.048	96	0.050	0.048	96	0	75-125	20	
	1,1,2,2-Tetrachloroethane	ND	0.050	0.049	98	0.050	0.056	112	13	50-130	31	
	1,1,2-Trichloroethane	ND	0.050	0.049	98	0.050	0.051	102	4	75-127	20	
	1,1-Dichloroethane	ND	0.050	0.052	104	0.050	0.052	104	0	60-130	20	
	1,1-Dichloroethene	ND	0.050	0.047	94	0.050	0.047	94	0	59-172	22	
	1,1-Dichloropropene	ND	0.050	0.040	80	0.050	0.042	84	5	75-125	20	
	1,2,3-Trichlorobenzene	ND	0.050	0.049	98	0.050	0.054	108	10	75-137	20	
	1,2,3-Trichloropropane	ND	0.050	0.050	100	0.050	0.053	106	6	75-125	20	
	1,2,4-Trichlorobenzene	ND	0.050	0.051	102	0.050	0.055	110	8	75-135	20	
	1,2,4-Trimethylbenzene	ND	0.050	0.051	102	0.050	0.054	108	6	75-125	20	
	1,2-Dibromo-3-Chloropropane	ND	0.050	0.047	94	0.050	0.049	98	4	59-125	28	
	1,2-Dibromoethane	ND	0.050	0.048	96	0.050	0.050	100	4	73-125	20	
	1,2-Dichlorobenzene	ND	0.050	0.049	98	0.050	0.051	102	4	75-125	20	
	1,2-Dichloroethane	ND	0.050	0.048	96	0.050	0.049	98	2	68-127	20	
	1,2-Dichloropropane	ND	0.050	0.049	98	0.050	0.051	102	4	74-125	20	
	1,3,5-Trimethylbenzene	ND	0.050	0.051	102	0.050	0.053	106	4	70-125	20	
	1,3-Dichlorobenzene	ND	0.050	0.049	98	0.050	0.052	104	6	75-125	20	
	1,3-Dichloropropane	ND	0.050	0.047	94	0.050	0.050	100	6	75-125	20	
	1,4-Dichlorobenzene	ND	0.050	0.047	94	0.050	0.049	98	4	75-125	20	
	2,2-Dichloropropane	ND	0.050	0.046	92	0.050	0.045	90	2	60-140	20	
	2-Chlorotoluene	ND	0.050	0.050	100	0.050	0.051	102	2	73-125	20	
	4-Chlorotoluene	ND	0.050	0.049	98	0.050	0.051	102	4	74-125	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times [(C-F)/(C+F)]$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$



# Form 3 - MS / MSD Recoveries

Project Name: Playa Lake Discharge

Work Order #: 391999

Lab Batch ID: 826210

Date Analyzed: 10/05/2010

Reporting Units: mg/L

Project ID:

QC- Sample ID: 392103-007 S Batch #: 1 Matrix: Water

Date Prepared: 10/05/2010 Analyst: CYE

VOAs by SW-846 8260B		Analytes									
Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	ND	0.050	0.047	94	0.050	0.048	96	2	66-142	21	
Bromobenzene	ND	0.050	0.048	96	0.050	0.050	100	4	60-130	20	
Bromochloromethane	ND	0.050	0.049	98	0.050	0.050	100	2	73-125	20	
Bromodichloromethane	ND	0.050	0.047	94	0.050	0.048	96	2	75-125	20	
Bromoform	ND	0.050	0.041	82	0.050	0.043	86	5	75-125	20	
Bromomethane	ND	0.050	0.044	88	0.050	0.039	78	12	70-130	20	
Carbon Tetrachloride	ND	0.050	0.046	92	0.050	0.046	92	0	62-125	20	
Chlorobenzene	ND	0.050	0.048	96	0.050	0.049	98	2	60-133	21	
Chloroethane	ND	0.050	0.053	106	0.050	0.058	116	9	70-130	20	
Chloroform	ND	0.050	0.049	98	0.050	0.050	100	2	74-125	20	
Chloromethane	ND	0.050	0.048	96	0.050	0.046	92	4	70-130	20	
cis-1,2-Dichloroethene	ND	0.050	0.050	100	0.050	0.051	102	2	60-130	20	
cis-1,3-Dichloropropene	ND	0.050	0.048	96	0.050	0.051	102	6	60-140	20	
Dibromochloromethane	ND	0.050	0.043	86	0.050	0.046	92	7	60-130	20	
Dibromomethane	ND	0.050	0.050	100	0.050	0.052	104	4	69-127	23	
Dichlorodifluoromethane	ND	0.050	0.059	118	0.050	0.057	114	3	70-130	23	
Ethylbenzene	ND	0.050	0.050	100	0.050	0.051	102	2	75-125	20	
Hexachlorobutadiene	ND	0.050	0.046	92	0.050	0.050	100	8	75-125	20	
isopropylbenzene	ND	0.050	0.052	104	0.050	0.051	102	2	75-125	20	
m,p-Xylenes	ND	0.100	0.099	99	0.100	0.101	101	2	75-125	20	
Methylene Chloride	0.010	0.050	0.056	92	0.050	0.056	92	0	75-125	35	
MTBE	0.021	0.050	0.099	156	0.050	0.102	162	3	75-125	20	
Naphthalene	ND	0.050	0.058	116	0.050	0.064	128	10	65-135	20	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$

Relative Percent Difference  $RPD = 200 \times (C-F)/(C+J)$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

Applicable N = See Narrative, EQL = Estimated Quantitation Limit

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$



# Form 3 - MS / MSD Recoveries

Project Name: Playa Lake Discharge

Work Order #: 391999

Lab Batch ID: 826210

Date Analyzed: 10/05/2010

Reporting Units: mg/L

Project ID:

QC- Sample ID: 392103-007 S

Batch #: 1 Matrix: Water

Date Prepared: 10/05/2010

Analyst: CYE

VOAs by SW-846 8260B										
Analytes										
Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
n-Butylbenzene	ND	0.050	106	0.050	0.055	110	4	75-125	20	
n-Propylbenzene	ND	0.050	104	0.050	0.053	106	2	75-125	20	
o-Xylene	ND	0.050	104	0.050	0.054	108	4	75-125	20	
p-Cymene (p-Isopropyltoluene)	ND	0.050	106	0.050	0.056	112	6	75-125	20	
Sec-Butylbenzene	ND	0.050	104	0.050	0.054	108	4	75-125	20	
Styrene	ND	0.050	106	0.050	0.054	108	2	60-130	51	
tert-Butylbenzene	ND	0.050	104	0.050	0.055	110	6	75-125	20	
Tetrachloroethylene	ND	0.050	94	0.050	0.048	96	2	60-130	20	
Toluene	ND	0.050	90	0.050	0.047	94	4	59-139	21	
trans-1,2-dichloroethene	ND	0.050	94	0.050	0.047	94	0	60-130	20	
trans-1,3-dichloropropene	ND	0.050	92	0.050	0.048	96	4	66-125	20	
Trichloroethene	ND	0.050	94	0.050	0.048	96	2	62-137	24	
Trichlorofluoromethane	ND	0.050	104	0.050	0.049	98	6	67-125	20	
Vinyl Chloride	ND	0.050	100	0.050	0.048	96	4	75-125	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B

Relative Percent Difference RPD = 200\*((C-F)/(C+E))

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

Applicable N = See Narrative, EQL = Estimated Quantitation Limit

Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



# Sample Duplicate Recovery

Project Name: Playa Lake Discharge

Work Order #: 391999

Lab Batch #: 826110

Date Analyzed: 10/05/2010

QC- Sample ID: 391773-001 D

Reporting Units: mg/L

Date Prepared: 10/05/2010

Batch #: 1

Project ID:

Analyst: HAT

Matrix: Solid

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TCLP Metals by SW 6020A	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Antimony	ND	ND	NC	20	
Arsenic	0.015	0.012	22	20	F
Barium	2.24	2.29	2	20	
Beryllium	ND	ND	NC	20	
Cadmium	ND	ND	NC	20	
Chromium	ND	ND	NC	20	
Lead	ND	ND	NC	20	
Nickel	0.081	0.085	5	20	
Selenium	ND	ND	NC	20	
Silver	ND	ND	NC	20	

Spike Relative Difference  $RPD = 200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.  
 BRL - Below Reporting Limit







XENCO Laboratories  
Atlanta, Boca Raton, Corpus Christi, Dallas  
Houston, Miami, Odessa, Philadelphia  
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS-SRC  
Revision/Date: No. 01, 5/27/2010  
Effective Date: 6/1/2010 Page 1 of 1

## Prelogin / Nonconformance Report - Sample Log-In

Client: Frontier Field Services  
Date/Time: 9/30/10 16:00  
Lab ID #: 391999  
Initials: AE

## Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No
2. Shipping container in good condition?	Yes	No	None
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A
4. Chain of Custody present?	Yes	No	
5. Sample instructions complete on chain of custody?	Yes	No	
6. Any missing / extra samples?	Yes	No	
7. Chain of custody signed when relinquished / received?	Yes	No	
8. Chain of custody agrees with sample label(s)?	Yes	No	
9. Container labels legible and intact?	Yes	No	
10. Sample matrix / properties agree with chain of custody?	Yes	No	
11. Samples in proper container / bottle?	Yes	No	
12. Samples properly preserved?	Yes	No	N/A
13. Sample container intact?	Yes	No	
14. Sufficient sample amount for indicated test(s)?	Yes	No	
15. All samples received within sufficient hold time?	Yes	No	
16. Subcontract of sample(s)?	Yes	No	N/A
17. VOC sample have zero head space?	Yes	No	N/A
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.
lbs 7.10 °C	lbs °C	lbs °C	lbs °C

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1 a.f.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

# Frontier Field Services, LLC

*Southern Ute Indian Tribe*

## Maljamar Gas Plant

Monthly R.O. Discharge to Playa Lake

Date	Meter Reading	Gallons per Month	Barrels per Month	Cumulative BBL	Monthly Average BBL
	1,675,630				
January 1, 2008	1,692,520	16,890	402	402	402
February 1, 2008	1,706,260	13,740	327	729	365
March 1, 2008	1,717,150	10,890	259	989	330
April 1, 2008	1,728,120	10,970	261	1,250	312
May 1, 2008	1,738,570	10,450	249	1,499	300
June 1, 2008	1,749,340	10,770	256	1,755	253
July 1, 2008	1,757,990	8,650	206	1,961	231
August 1, 2008	1,767,130	9,140	218	2,179	227
September 1, 2008	1,775,220	8,090	193	2,371	218
October 1, 2008	1,783,210	7,990	190	2,561	213
November 1, 2008	1,792,890	9,680	230	2,792	216
December 1, 2008	1,802,190	9,300	221	3,013	216
January 1, 2009	1,811,620	9,430	225	3,238	217
February 1, 2009	1,820,000	8,380	200	3,437	215
March 1, 2009	1,828,090	8,090	193	3,630	213
April 1, 2009	1,836,620	8,530	203	3,833	212
May 1, 2009	1,843,990	7,370	175	4,009	209
June 1, 2009	1,851,580	7,590	181	4,189	207
July 1, 2009	1,858,420	6,840	163	4,352	172
August 1, 2009	1,865,690	7,270	173	4,525	172
September 1, 2009	1,873,070	7,380	176	4,701	173
October 1, 2009	1,879,520	6,450	154	4,855	169
November 1, 2009	1,886,990	7,470	178	5,032	171
December 1, 2009	1,895,650	8,660	206	5,239	176
January 1, 2010	1,903,990	8,340	199	5,437	179
February 1, 2010	1,914,384	10,394	247	5,685	186
March 1, 2010	1,921,680	7,296	174	5,858	185
April 1, 2010	1,929,840	8,160	194	6,053	186
May 1, 2010	1,940,500	10,660	254	6,306	191
June 1, 2010	1,948,150	7,650	182	6,489	191
July 1, 2010	1,955,840	7,690	183	6,672	183
August 1, 2010	1,968,006	12,166	290	6,961	218
September 1, 2010	1,980,240	12,234	291	7,253	237
October 1, 2010	1,990,010	9,770	233	7,485	236
November 1, 2010		-1,990,010	-47,381	-39,896	-7,700
December 1, 2010		0	0	-39,896	-157,971



# Analytical Report 428923

## for Frontier Field Services

**Project Manager: Steve Maker**

**Playa Lake Discharge**

**14-OCT-11**

Collected By: Client



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**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



14-OCT-11

Project Manager: **Steve Maker**  
**Frontier Field Services**  
1001 Conoco Road

Maljamar, NM 88264

Reference: XENCO Report No: **428923**  
**Playa Lake Discharge**  
Project Address: Maljamar, NM

**Steve Maker:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 428923. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 428923 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron II**

Odessa Laboratory Manager

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**Sample Cross Reference 428923**

**Frontier Field Services, Maljamar, NM**  
Playa Lake Discharge

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Playa Lake Discharge	W	10-04-11 12:20		428923-001



## CASE NARRATIVE

*Client Name: Frontier Field Services*

*Project Name: Playa Lake Discharge*



*Project ID:*  
*Work Order Number: 428923*

*Report Date: 14-OCT-11*  
*Date Received: 10/04/2011*

---

***Sample receipt non conformances and comments:***

*None*

---

***Sample receipt non conformances and comments per sample:***

*None*

***Analytical non nonformances and comments:***

*Batch: LBA-872283 VOAs by SW-846 8260B*  
*SW8260B*

*Batch 872283, Chloromethane recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Vinyl Chloride recovered below QC limits in the Matrix Spike Duplicate.*

*Samples affected are: 428923-001.*

*The Laboratory Control Sample for Chloromethane, Vinyl Chloride is within laboratory Control Limits*



# Certificate of Analysis Summary 428923

Frontier Field Services, Maljamar, NM

Project Name: Playa Lake Discharge



Project Id:

Contact: Steve Maker

Project Location: Maljamar, NM

Date Received in Lab: Tue Oct-04-11 03:40 pm

Report Date: 14-OCT-11

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	428923-001					
	<i>Field Id:</i>	Playa Lake Discharge					
	<i>Depth:</i>						
	<i>Matrix:</i>	WATER					
	<i>Sampled:</i>	Oct-04-11 12:20					
<b>TCLP Mercury by SW 7470A SUB: E87429</b>	<i>Extracted:</i>	Oct-11-11 09:08					
	<i>Analyzed:</i>	Oct-12-11 11:27					
	<i>Units/RL:</i>	mg/L RL					
Mercury		ND 0.0100					
<b>TCLP RCRA Metals by SW-846 1311/6010C SUB: E87429</b>	<i>Extracted:</i>	Oct-10-11 10:44					
	<i>Analyzed:</i>	Oct-10-11 16:53					
	<i>Units/RL:</i>	mg/L RL					
Arsenic		ND 0.500					
Barium		ND 0.500					
Cadmium		ND 0.500					
Chromium		ND 0.500					
Lead		ND 0.500					
Selenium		ND 0.500					
Silver		ND 0.500					

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Brent Barron II  
Odessa Laboratory Manager



# Certificate of Analysis Summary 428923

Frontier Field Services, Maljamar, NM



**Project Id:**

**Contact:** Steve Maker

**Project Location:** Maljamar, NM

**Project Name:** Playa Lake Discharge

**Date Received in Lab:** Tue Oct-04-11 03:40 pm

**Report Date:** 14-OCT-11

**Project Manager:** Brent Barron II

<b>Analysis Requested</b>	<b>Lab Id:</b> 428923-001					
	<b>Field Id:</b> Playa Lake Discharge					
	<b>Depth:</b>					
	<b>Matrix:</b> WATER					
	<b>Sampled:</b> Oct-04-11 12:20					
<b>VOAs by SW-846 8260B SUB: E871002</b>	<b>Extracted:</b> Oct-12-11 11:21					
	<b>Analyzed:</b> Oct-12-11 12:58					
	<b>Units/RL:</b> mg/L RL					
1,1,1,2-Tetrachloroethane	ND 0.00500					
1,1,1-Trichloroethane	ND 0.00500					
1,1,2,2-Tetrachloroethane	ND 0.00500					
1,1,2-Trichloroethane	ND 0.00500					
1,1-Dichloroethane	ND 0.00500					
1,1-Dichloroethene	ND 0.00500					
1,1-Dichloropropene	ND 0.00500					
1,2,3-Trichlorobenzene	ND 0.00500					
1,2,3-Trichloropropane	ND 0.00500					
1,2,4-Trichlorobenzene	ND 0.00500					
1,2,4-Trimethylbenzene	ND 0.00500					
1,2-Dibromo-3-Chloropropane	ND 0.00500					
1,2-Dibromoethane	ND 0.00500					
1,2-Dichlorobenzene	ND 0.00500					
1,2-Dichloroethane	ND 0.00500					
1,2-Dichloropropane	ND 0.00500					
1,3,5-Trimethylbenzene	ND 0.00500					
1,3-Dichlorobenzene	ND 0.00500					
1,3-Dichloropropane	ND 0.00500					
1,4-Dichlorobenzene	ND 0.00500					
2,2-Dichloropropane	ND 0.00500					
2-Chlorotoluene	ND 0.00500					
4-Chlorotoluene	ND 0.00500					
Benzene	ND 0.00500					
Bromobenzene	ND 0.00500					

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# Certificate of Analysis Summary 428923

Frontier Field Services, Maljamar, NM



**Project Id:**

**Contact:** Steve Maker

**Project Location:** Maljamar, NM

**Project Name:** Playa Lake Discharge

**Date Received in Lab:** Tue Oct-04-11 03:40 pm

**Report Date:** 14-OCT-11

**Project Manager:** Brent Barron II

<b>Analysis Requested</b>	<b>Lab Id:</b> 428923-001					
	<b>Field Id:</b> Playa Lake Discharge					
	<b>Depth:</b>					
	<b>Matrix:</b> WATER					
	<b>Sampled:</b> Oct-04-11 12:20					
<b>VOAs by SW-846 8260B SUB: E871002</b>	<b>Extracted:</b> Oct-12-11 11:21					
	<b>Analyzed:</b> Oct-12-11 12:58					
	<b>Units/RL:</b> mg/L RL					
Bromochloromethane	ND 0.00500					
Bromodichloromethane	ND 0.00500					
Bromoform	0.00534 0.00500					
Bromomethane	ND 0.00500					
Carbon Tetrachloride	ND 0.00500					
Chlorobenzene	ND 0.00500					
Chloroethane	ND 0.0100					
Chloroform	ND 0.00500					
Chloromethane	ND 0.0100					
cis-1,2-Dichloroethene	ND 0.00500					
cis-1,3-Dichloropropene	ND 0.00500					
Dibromochloromethane	ND 0.00500					
Dibromomethane	ND 0.00500					
Dichlorodifluoromethane	ND 0.00500					
Ethylbenzene	ND 0.00500					
Hexachlorobutadiene	ND 0.00500					
isopropylbenzene	ND 0.00500					
m,p-Xylenes	ND 0.0100					
Methylene Chloride	ND 0.00500					
MTBE	ND 0.00500					
Naphthalene	ND 0.0100					
n-Butylbenzene	ND 0.00500					
n-Propylbenzene	ND 0.00500					
o-Xylene	ND 0.00500					
p-Cymene (p-Isopropyltoluene)	ND 0.00500					

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Odessa Laboratory Manager



# Certificate of Analysis Summary 428923

Frontier Field Services, Maljamar, NM



**Project Id:**

**Contact:** Steve Maker

**Project Location:** Maljamar, NM

**Project Name:** Playa Lake Discharge

**Date Received in Lab:** Tue Oct-04-11 03:40 pm

**Report Date:** 14-OCT-11

**Project Manager:** Brent Barron II

<b>Analysis Requested</b>	<b>Lab Id:</b> 428923-001					
	<b>Field Id:</b> Playa Lake Discharge					
	<b>Depth:</b>					
	<b>Matrix:</b> WATER					
	<b>Sampled:</b> Oct-04-11 12:20					
<b>VOAs by SW-846 8260B SUB: E871002</b>	<b>Extracted:</b> Oct-12-11 11:21					
	<b>Analyzed:</b> Oct-12-11 12:58					
	<b>Units/RL:</b> mg/L RL					
Sec-Butylbenzene	ND 0.00500					
Styrene	ND 0.00500					
tert-Butylbenzene	ND 0.00500					
Tetrachloroethylene	ND 0.00500					
Toluene	ND 0.00500					
trans-1,2-dichloroethene	ND 0.00500					
trans-1,3-dichloropropene	ND 0.00500					
Trichloroethene	ND 0.00500					
Trichlorofluoromethane	ND 0.00500					
Vinyl Chloride	ND 0.00200					

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Odessa Laboratory Manager





## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

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(770) 449-8800	(770) 449-5477
(602) 437-0330	

# Form 2 - Surrogate Recoveries

Project Name: Playa Lake Discharge

Work Orders : 428923,

Project ID:

Lab Batch #: 872283

Sample: 428923-001 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/12/11 12:58

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0477	0.0500	95	74-124	
Dibromofluoromethane	0.0440	0.0500	88	75-131	
1,2-Dichloroethane-D4	0.0470	0.0500	94	63-144	
Toluene-D8	0.0483	0.0500	97	80-117	

Lab Batch #: 872283

Sample: 612648-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/12/11 12:14

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0475	0.0500	95	74-124	
Dibromofluoromethane	0.0453	0.0500	91	75-131	
1,2-Dichloroethane-D4	0.0485	0.0500	97	63-144	
Toluene-D8	0.0484	0.0500	97	80-117	

Lab Batch #: 872283

Sample: 612648-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/12/11 18:27

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0454	0.0500	91	74-124	
Dibromofluoromethane	0.0475	0.0500	95	75-131	
1,2-Dichloroethane-D4	0.0448	0.0500	90	63-144	
Toluene-D8	0.0478	0.0500	96	80-117	

Lab Batch #: 872283

Sample: 428923-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/12/11 13:20

## SURROGATE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0466	0.0500	93	74-124	
Dibromofluoromethane	0.0472	0.0500	94	75-131	
1,2-Dichloroethane-D4	0.0465	0.0500	93	63-144	
Toluene-D8	0.0478	0.0500	96	80-117	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.

**Form 2 - Surrogate Recoveries****Project Name: Playa Lake Discharge****Work Orders :** 428923,**Project ID:****Lab Batch #:** 872283**Sample:** 428923-001 SD / MSD**Batch:** 1 **Matrix:** Water**Units:** mg/L**Date Analyzed:** 10/12/11 13:42**SURROGATE RECOVERY STUDY**

<b>VOAs by SW-846 8260B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
4-Bromofluorobenzene	0.0467	0.0500	93	74-124	
Dibromofluoromethane	0.0483	0.0500	97	75-131	
1,2-Dichloroethane-D4	0.0477	0.0500	95	63-144	
Toluene-D8	0.0486	0.0500	97	80-117	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$ 

All results are based on MDL and validated for QC purposes.

## Project Name: Playa Lake Discharge

Work Order #: 428923

Project ID:

Lab Batch #: 872283

Sample: 612648-1-BKS

Matrix: Water

Date Analyzed: 10/12/2011

Date Prepared: 10/12/2011

Analyst: CYE

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0576	115	75-125	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0512	102	75-125	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0425	85	50-130	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0476	95	75-127	
1,1-Dichloroethane	<0.00500	0.0500	0.0473	95	60-130	
1,1-Dichloroethene	<0.00500	0.0500	0.0528	106	59-172	
1,1-Dichloropropene	<0.00500	0.0500	0.0492	98	75-125	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0515	103	75-137	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0421	84	75-125	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0529	106	75-135	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0521	104	75-125	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0402	80	59-125	
1,2-Dibromoethane	<0.00500	0.0500	0.0475	95	73-125	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0513	103	75-125	
1,2-Dichloroethane	<0.00500	0.0500	0.0477	95	68-127	
1,2-Dichloropropane	<0.00500	0.0500	0.0466	93	74-125	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0535	107	70-125	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0526	105	75-125	
1,3-Dichloropropane	<0.00500	0.0500	0.0472	94	75-125	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0527	105	75-125	
2,2-Dichloropropane	<0.00500	0.0500	0.0536	107	60-140	
2-Chlorotoluene	<0.00500	0.0500	0.0524	105	73-125	
4-Chlorotoluene	<0.00500	0.0500	0.0496	99	74-125	
Benzene	<0.00500	0.0500	0.0489	98	66-142	
Bromobenzene	<0.00500	0.0500	0.0511	102	60-130	
Bromochloromethane	<0.00500	0.0500	0.0485	97	73-125	
Bromodichloromethane	<0.00500	0.0500	0.0506	101	75-125	
Bromoform	<0.00500	0.0500	0.0462	92	75-125	
Bromomethane	<0.00500	0.0500	0.0528	106	70-130	
Carbon Tetrachloride	<0.00500	0.0500	0.0535	107	62-125	
Chlorobenzene	<0.00500	0.0500	0.0527	105	60-133	
Chloroethane	<0.0100	0.0500	0.0475	95	70-130	
Chloroform	<0.00500	0.0500	0.0463	93	74-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

## Project Name: Playa Lake Discharge

Work Order #: 428923

Project ID:

Lab Batch #: 872283

Sample: 612648-1-BKS

Matrix: Water

Date Analyzed: 10/12/2011

Date Prepared: 10/12/2011

Analyst: CYE

Reporting Units: mg/L

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

VOAs by SW-846 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloromethane	<0.0100	0.0500	0.0416	83	70-130	
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0492	98	60-130	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0526	105	60-140	
Dibromochloromethane	<0.00500	0.0500	0.0523	105	60-130	
Dibromomethane	<0.00500	0.0500	0.0466	93	69-127	
Dichlorodifluoromethane	<0.00500	0.0500	0.0519	104	70-130	
Ethylbenzene	<0.00500	0.0500	0.0525	105	75-125	
Hexachlorobutadiene	<0.00500	0.0500	0.0517	103	75-125	
isopropylbenzene	<0.00500	0.0500	0.0544	109	75-125	
m,p-Xylenes	<0.0100	0.100	0.109	109	75-125	
Methylene Chloride	0.00650	0.0500	0.0461	92	75-125	
MTBE	<0.00500	0.0500	0.0500	100	75-125	
Naphthalene	<0.0100	0.0500	0.0519	104	65-135	
n-Butylbenzene	<0.00500	0.0500	0.0514	103	75-125	
n-Propylbenzene	<0.00500	0.0500	0.0542	108	75-125	
o-Xylene	<0.00500	0.0500	0.0549	110	75-125	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0546	109	75-125	
Sec-Butylbenzene	<0.00500	0.0500	0.0525	105	75-125	
Styrene	<0.00500	0.0500	0.0554	111	60-130	
tert-Butylbenzene	<0.00500	0.0500	0.0535	107	75-125	
Tetrachloroethylene	<0.00500	0.0500	0.0567	113	60-130	
Toluene	<0.00500	0.0500	0.0514	103	59-139	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0509	102	60-130	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0502	100	66-125	
Trichloroethene	<0.00500	0.0500	0.0536	107	62-137	
Trichlorofluoromethane	<0.00500	0.0500	0.0527	105	67-125	
Vinyl Chloride	<0.00200	0.0500	0.0479	96	75-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



## BS / BSD Recoveries



**Project Name: Playa Lake Discharge**

**Work Order #:** 428923

**Analyst:** 4150

**Date Prepared:** 10/11/2011

**Project ID:**

**Date Analyzed:** 10/12/2011

**Lab Batch ID:** 872142

**Sample:** 612487-1-BKS

**Batch #:** 1

**Matrix:** Water

**Units:** mg/L

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
Mercury	<0.0100	0.0250	0.0256	102	0.0250	0.0256	102	0	75-125	20	

**Analyst:** 4150

**Date Prepared:** 10/10/2011

**Date Analyzed:** 10/10/2011

**Lab Batch ID:** 871973

**Sample:** 612449-1-BKS

**Batch #:** 1

**Matrix:** Water

**Units:** mg/L

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP RCRA Metals by SW-846 1311/6010C	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
Arsenic	<0.0200	2.00	2.09	105	2.00	2.10	105	0	80-120	20	
Barium	<0.100	2.00	1.90	95	2.00	1.90	95	0	80-120	20	
Cadmium	<0.0100	2.00	1.96	98	2.00	1.95	98	1	80-120	20	
Chromium	<0.100	2.00	1.91	96	2.00	1.90	95	1	80-120	20	
Lead	<0.0200	2.00	1.91	96	2.00	1.91	96	0	80-120	20	
Selenium	<0.0200	2.00	2.13	107	2.00	2.10	105	1	80-120	20	
Silver	<0.100	2.00	1.88	94	2.00	1.88	94	0	80-120	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



**Project Name: Playa Lake Discharge**

**Work Order # :** 428923

**Project ID:**

**Lab Batch ID:** 872142

**QC- Sample ID:** 428923-001 S

**Batch #:** 1 **Matrix:** Water

**Date Analyzed:** 10/12/2011

**Date Prepared:** 10/11/2011

**Analyst:** 4150

**Reporting Units:** mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TCLP Mercury by SW 7470A	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Mercury	<0.0100	0.0250	0.0262	105	0.0250	0.0258	103	2	75-125	20	

**Lab Batch ID:** 871973

**QC- Sample ID:** 428133-001 S

**Batch #:** 1 **Matrix:** Sludge

**Date Analyzed:** 10/10/2011

**Date Prepared:** 10/10/2011

**Analyst:** 4150

**Reporting Units:** mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TCLP RCRA Metals by SW-846 1311/6010C	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Arsenic	<0.0200	2.00	2.07	104	2.00	2.09	105	1	80-120	20	
Barium	2.00	2.00	3.85	93	2.00	3.91	96	2	80-120	20	
Cadmium	<0.0100	2.00	1.91	96	2.00	1.91	96	0	80-120	20	
Chromium	<0.100	2.00	1.89	95	2.00	1.89	95	0	80-120	20	
Lead	<0.0200	2.00	1.88	94	2.00	1.87	94	1	80-120	20	
Selenium	<0.0200	2.00	2.06	103	2.00	2.08	104	1	80-120	20	
Silver	<0.100	2.00	1.88	94	2.00	1.89	95	1	80-120	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



# Form 3 - MS / MSD Recoveries



**Project Name: Playa Lake Discharge**

**Work Order # :** 428923

**Project ID:**

**Lab Batch ID:** 872283

**QC- Sample ID:** 428923-001 S

**Batch #:** 1 **Matrix:** Water

**Date Analyzed:** 10/12/2011

**Date Prepared:** 10/12/2011

**Analyst:** CYE

**Reporting Units:** mg/L

VOAs by SW-846 8260B  Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
1,1,1,2-Tetrachloroethane	<0.00500	0.0500	0.0605	121	0.0500	0.0619	124	2	75-125	20	
1,1,1-Trichloroethane	<0.00500	0.0500	0.0543	109	0.0500	0.0547	109	1	75-125	20	
1,1,2,2-Tetrachloroethane	<0.00500	0.0500	0.0480	96	0.0500	0.0520	104	8	50-130	31	
1,1,2-Trichloroethane	<0.00500	0.0500	0.0513	103	0.0500	0.0536	107	4	75-127	20	
1,1-Dichloroethane	<0.00500	0.0500	0.0528	106	0.0500	0.0527	105	0	60-130	20	
1,1-Dichloroethene	<0.00500	0.0500	0.0519	104	0.0500	0.0532	106	2	59-172	22	
1,1-Dichloropropene	<0.00500	0.0500	0.0518	104	0.0500	0.0522	104	1	75-125	20	
1,2,3-Trichlorobenzene	<0.00500	0.0500	0.0564	113	0.0500	0.0576	115	2	75-137	20	
1,2,3-Trichloropropane	<0.00500	0.0500	0.0488	98	0.0500	0.0519	104	6	75-125	20	
1,2,4-Trichlorobenzene	<0.00500	0.0500	0.0570	114	0.0500	0.0568	114	0	75-135	20	
1,2,4-Trimethylbenzene	<0.00500	0.0500	0.0564	113	0.0500	0.0558	112	1	75-125	20	
1,2-Dibromo-3-Chloropropane	<0.00500	0.0500	0.0473	95	0.0500	0.0543	109	14	59-125	28	
1,2-Dibromoethane	<0.00500	0.0500	0.0510	102	0.0500	0.0560	112	9	73-125	20	
1,2-Dichlorobenzene	<0.00500	0.0500	0.0552	110	0.0500	0.0553	111	0	75-125	20	
1,2-Dichloroethane	<0.00500	0.0500	0.0520	104	0.0500	0.0533	107	2	68-127	20	
1,2-Dichloropropane	<0.00500	0.0500	0.0501	100	0.0500	0.0479	96	4	74-125	20	
1,3,5-Trimethylbenzene	<0.00500	0.0500	0.0573	115	0.0500	0.0565	113	1	70-125	20	
1,3-Dichlorobenzene	<0.00500	0.0500	0.0563	113	0.0500	0.0564	113	0	75-125	20	
1,3-Dichloropropane	<0.00500	0.0500	0.0526	105	0.0500	0.0539	108	2	75-125	20	
1,4-Dichlorobenzene	<0.00500	0.0500	0.0566	113	0.0500	0.0564	113	0	75-125	20	
2,2-Dichloropropane	<0.00500	0.0500	0.0548	110	0.0500	0.0573	115	4	60-140	20	
2-Chlorotoluene	<0.00500	0.0500	0.0567	113	0.0500	0.0555	111	2	73-125	20	
4-Chlorotoluene	<0.00500	0.0500	0.0529	106	0.0500	0.0524	105	1	74-125	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C-A) / B$   
Relative Percent Difference  $RPD = 200 * |(C-F) / (C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F-A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit





# Form 3 - MS / MSD Recoveries



**Project Name: Playa Lake Discharge**

**Work Order # :** 428923

**Project ID:**

**Lab Batch ID:** 872283

**QC- Sample ID:** 428923-001 S

**Batch #:** 1 **Matrix:** Water

**Date Analyzed:** 10/12/2011

**Date Prepared:** 10/12/2011

**Analyst:** CYE

**Reporting Units:** mg/L

VOAs by SW-846 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00500	0.0500	0.0514	103	0.0500	0.0508	102	1	66-142	21	
Bromobenzene	<0.00500	0.0500	0.0533	107	0.0500	0.0548	110	3	60-130	20	
Bromochloromethane	<0.00500	0.0500	0.0527	105	0.0500	0.0556	111	5	73-125	20	
Bromodichloromethane	<0.00500	0.0500	0.0569	114	0.0500	0.0569	114	0	75-125	20	
Bromoform	0.00534	0.0500	0.0599	109	0.0500	0.0654	120	9	75-125	20	
Bromomethane	<0.00500	0.0500	0.0421	84	0.0500	0.0415	83	1	70-130	20	
Carbon Tetrachloride	<0.00500	0.0500	0.0565	113	0.0500	0.0576	115	2	62-125	20	
Chlorobenzene	<0.00500	0.0500	0.0554	111	0.0500	0.0552	110	0	60-133	21	
Chloroethane	<0.0100	0.0500	0.0382	76	0.0500	0.0377	75	1	70-130	20	
Chloroform	<0.00500	0.0500	0.0508	102	0.0500	0.0505	101	1	74-125	20	
Chloromethane	<0.0100	0.0500	0.0308	62	0.0500	0.0299	60	3	70-130	20	X
cis-1,2-Dichloroethene	<0.00500	0.0500	0.0527	105	0.0500	0.0533	107	1	60-130	20	
cis-1,3-Dichloropropene	<0.00500	0.0500	0.0575	115	0.0500	0.0579	116	1	60-140	20	
Dibromochloromethane	<0.00500	0.0500	0.0591	118	0.0500	0.0625	125	6	60-130	20	
Dibromomethane	<0.00500	0.0500	0.0528	106	0.0500	0.0541	108	2	69-127	23	
Dichlorodifluoromethane	<0.00500	0.0500	0.0370	74	0.0500	0.0348	70	6	70-130	23	
Ethylbenzene	<0.00500	0.0500	0.0540	108	0.0500	0.0533	107	1	75-125	20	
Hexachlorobutadiene	<0.00500	0.0500	0.0572	114	0.0500	0.0551	110	4	75-125	20	
isopropylbenzene	<0.00500	0.0500	0.0552	110	0.0500	0.0552	110	0	75-125	20	
m,p-Xylenes	<0.0100	0.100	0.113	113	0.100	0.113	113	0	75-125	20	
Methylene Chloride	<0.00500	0.0500	0.0489	98	0.0500	0.0502	100	3	75-125	35	
MTBE	<0.00500	0.0500	0.0588	118	0.0500	0.0626	125	6	75-125	20	
Naphthalene	<0.0100	0.0500	0.0584	117	0.0500	0.0615	123	5	65-135	20	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
Relative Percent Difference  $RPD = 200 * [(C - F) / (C + F)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



# Form 3 - MS / MSD Recoveries



**Project Name: Playa Lake Discharge**

**Work Order # :** 428923

**Project ID:**

**Lab Batch ID:** 872283

**QC- Sample ID:** 428923-001 S

**Batch #:** 1 **Matrix:** Water

**Date Analyzed:** 10/12/2011

**Date Prepared:** 10/12/2011

**Analyst:** CYE

**Reporting Units:** mg/L

VOAs by SW-846 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
n-Butylbenzene	<0.00500	0.0500	0.0554	111	0.0500	0.0532	106	4	75-125	20	
n-Propylbenzene	<0.00500	0.0500	0.0577	115	0.0500	0.0568	114	2	75-125	20	
o-Xylene	<0.00500	0.0500	0.0582	116	0.0500	0.0585	117	1	75-125	20	
p-Cymene (p-Isopropyltoluene)	<0.00500	0.0500	0.0583	117	0.0500	0.0575	115	1	75-125	20	
Sec-Butylbenzene	<0.00500	0.0500	0.0570	114	0.0500	0.0554	111	3	75-125	20	
Styrene	<0.00500	0.0500	0.0564	113	0.0500	0.0571	114	1	60-130	51	
tert-Butylbenzene	<0.00500	0.0500	0.0575	115	0.0500	0.0568	114	1	75-125	20	
Tetrachloroethylene	<0.00500	0.0500	0.0576	115	0.0500	0.0576	115	0	60-130	20	
Toluene	<0.00500	0.0500	0.0541	108	0.0500	0.0530	106	2	59-139	21	
trans-1,2-dichloroethene	<0.00500	0.0500	0.0516	103	0.0500	0.0520	104	1	60-130	20	
trans-1,3-dichloropropene	<0.00500	0.0500	0.0545	109	0.0500	0.0580	116	6	66-125	20	
Trichloroethene	<0.00500	0.0500	0.0554	111	0.0500	0.0536	107	3	62-137	24	
Trichlorofluoromethane	<0.00500	0.0500	0.0460	92	0.0500	0.0442	88	4	67-125	20	
Vinyl Chloride	<0.00200	0.0500	0.0376	75	0.0500	0.0366	73	3	75-125	20	X

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
Relative Percent Difference  $RPD = 200 * [(C - F) / (C + F)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

## Sample Duplicate Recovery



## Project Name: Playa Lake Discharge

Work Order #: 428923

Lab Batch #: 872142

Date Analyzed: 10/12/2011 11:30

Date Prepared: 10/11/2011

Project ID:

Analyst: 4150

QC- Sample ID: 428923-001 D

Batch #: 1

Matrix: Water

Reporting Units: mg/L

## SAMPLE / SAMPLE DUPLICATE RECOVERY

TCLP Mercury by SW 7470A	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Mercury	<0.0100	<0.0100	0	20	U

Lab Batch #: 871973

Date Analyzed: 10/10/2011 16:21

Date Prepared: 10/10/2011

Analyst: 4150

QC- Sample ID: 428133-001 D

Batch #: 1

Matrix: Sludge

Reporting Units: mg/L

## SAMPLE / SAMPLE DUPLICATE RECOVERY

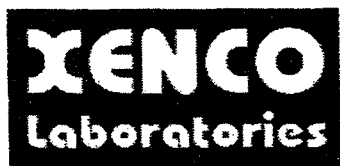
TCLP RCRA Metals by SW-846 1311/6010C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Arsenic	<0.0200	<0.0200	0	20	U
Barium	2.00	2.08	4	20	
Cadmium	<0.0100	<0.0100	0	20	U
Chromium	<0.100	<0.100	0	20	U
Lead	<0.0200	<0.0200	0	20	U
Selenium	<0.0200	<0.0200	0	20	U
Silver	<0.100	<0.100	0	20	U

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$ 

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit





## XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

## Prelogin / Nonconformance Report - Sample Log-In

Client: Frontier Field  
 Date/Time: 10-4-11 15:40  
 Lab ID #: 428923  
 Initials: AZ

## Sample Receipt Checklist

1. Samples on ice?	Blue	<del>Water</del>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<u>N/A</u>	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 1.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis



## Maljamar Gas Plant

Monthly R.O. Discharge to Playa Lake

Date	Meter Reading	Gallons per Month	Barrels per Month	Cumulative BBL
	2,020,150			
January 1, 2011	2,052,140	31,990	762	762
February 1, 2011	2,104,790	52,650	1,254	2,015
March 1, 2011	2,115,510	10,720	255	2,270
April 1, 2011	2,144,630	29,120	693	2,964
May 1, 2011	2,172,210	27,580	657	3,620
June 1, 2011	2,214,040	41,830	996	4,616
July 1, 2011	2,230,290	16,250	387	5,003
August 1, 2011	2,251,590	21,300	507	5,510
September 1, 2011	2,272,080	20,490	488	5,998
October 1, 2011	2,292,130	20,050	477	6,476
November 1, 2011		-2,292,130	-54,575	-48,099
December 1, 2011		0	0	-48,099
January 1, 2012		0	0	-48,099
February 1, 2012		0	0	-48,099
March 1, 2012		0	0	-48,099
April 1, 2012		0	0	-48,099
May 1, 2012		0	0	-48,099
June 1, 2012		0	0	-48,099
July 1, 2012		0	0	-48,099
August 1, 2012		0	0	-48,099
September 1, 2012		0	0	-48,099
October 1, 2012		0	0	-48,099
November 1, 2012		0	0	-48,099
December 1, 2012		0	0	-48,099
January 1, 2013		0	0	-48,099
February 1, 2013		0	0	-48,099
March 1, 2013		0	0	-48,099
April 1, 2013		0	0	-48,099
May 1, 2013		0	0	-48,099
June 1, 2013		0	0	-48,099
July 1, 2013		0	0	-48,099
August 1, 2013		0	0	-48,099
September 1, 2013		0	0	-48,099
October 1, 2013		0	0	-48,099
November 1, 2013		0	0	-48,099
December 1, 2013		0	0	-48,099

Released to Imaging: 6/6/2023 4:12:12 PM

# Frontier Field Services, LLC

*Southern Ute Indian Tribe*

## Maljamar Gas Plant

Monthly R.O. Discharge to Playa Lake

Date	Meter Reading	Gallons per Month	Barrels per Month	Cumulative BBL	Monthly Average BBL
	1,675,630				
January 1, 2008	1,692,520	16,890	402	402	402
February 1, 2008	1,706,260	13,740	327	729	365
March 1, 2008	1,717,150	10,890	259	989	330
April 1, 2008	1,728,120	10,970	261	1,250	312
May 1, 2008	1,738,570	10,450	249	1,499	300
June 1, 2008	1,749,340	10,770	256	1,755	293
July 1, 2008	1,757,990	8,650	206	1,961	280
August 1, 2008	1,767,130	9,140	218	2,179	272
September 1, 2008	1,775,220	8,090	193	2,371	263
October 1, 2008	1,783,210	7,990	190	2,561	256
November 1, 2008	1,792,890	9,680	230	2,792	216
December 1, 2008	1,802,190	9,300	221	3,013	251
January 1, 2009	1,811,620	9,430	225	3,238	249
February 1, 2009	1,820,000	8,380	200	3,437	246
March 1, 2009	1,828,090	8,090	193	3,630	242
April 1, 2009	1,836,620	8,530	203	3,833	240
May 1, 2009	1,843,990	7,370	175	4,009	236
June 1, 2009	1,851,580	7,590	181	4,189	233
July 1, 2009	1,858,420	6,840	163	4,352	229
August 1, 2009	1,865,690	7,270	173	4,525	226
September 1, 2009	1,873,070	7,380	176	4,701	224
October 1, 2008	1,879,520	6,450	154	4,855	221
November 1, 2009	1,886,990	7,470	178	5,032	219
December 1, 2009	1,895,650	8,660	206	5,239	218
January 1, 2010	1,903,990	8,340	199	5,437	217
February 1, 2010	1,914,384	10,394	247	5,685	219
March 1, 2010	1,921,680	7,296	174	5,858	217
April 1, 2010	1,929,840	8,160	194	6,053	216
May 1, 2010	1,940,500	10,660	254	6,306	217
June 1, 2010	1,948,150	7,650	182	6,489	216
July 1, 2010	1,955,840	7,690	183	6,672	215
August 1, 2010	1,968,006	12,166	290	6,961	218
September 1, 2010	1,980,240	12,234	291	7,253	220
October 1, 2010	1,990,010	9,770	233	7,485	220
November 1, 2010	2,000,940	10,930	260	7,745	221
December 1, 2010	2,020,154	19,214	457	8,203	228



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 218934

CONDITIONS

Operator: FRONTIER FIELD SERVICES, LLC 10077 Grogans Mill Rd. The Woodlands, TX 77380	OGRID: 221115
	Action Number: 218934
	Action Type: [UF-DP] NOI Generic Discharge Plan (DISCHARGE PLAN SERVICE COMPANIES NOI)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	6/6/2023