ARI# 30-015-29434

Jones, Brad A., EMNRD

From:

Jones, Brad A., EMNRD

Sent:

Thursday, June 14, 2012 2:38 PM David_Luna@xtoenergy.com

To: Cc:

Bratcher, Mike, EMNRD; Keith_Hebert@xtoenergy.com; 'Andrew Parker';

r@rthicksconsult.com

Subject:

Nash Unit #29 C-144 Application Submittal for Modular Impoundment approval 2012 6-14 XTO Energy Inc. Nash Unit #29 Poseidon Concepts TP permit 2.pdf

Attachments:

David,

Please see the attached... it is a copy of your approval. Thank you and the effort of your consultants for working with OCD in order for the OCD to complete the approval process. OCD appreciates XTO's effort in resolving this matter. If you have any questions, please do not hesitate to contact me.

Brad

Brad A. Jones

Environmental Engineer Environmental Bureau NM Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, New Mexico 87505

E-mail: brad.a.jones@state.nm.us

Office: (505) 476-3487 Fax: (505) 476-3462

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 13, 2012

Mr. Mike Bratcher NMOCD District 2 811 South First Street Artesia, New Mexico 88210 Via E-mail Mr. Brad Jones NMOCD 1220 S. St. Francis Drive Santa Fe, NM

RE: Nash Draw Unit #29 modular impoundment (Atlantis system) for temporary storage of treated produced water.

Dear Mike and Brad:

For the above-referenced modular impoundment, we are pleased to submit:

- 1. A C-144 Form
- 2. Supplemental information to support the C-144

Please contact me with any questions or comments at 505-266-5004

Sincerely,

R.T. Hicks Consultants

Andrew Parker

Copy: David Luna, XTO Energy

C-144 Permit Package for Nash Draw Unit #29 -Temporary Storage of Treated Produced Water - Modular Impoundment Section 13 T23S R29E Eddy County NM



Prepared for XTO Energy Midland, Texas

Prepared by R.T. Hicks Consultants, Ltd. Albuquerque, New Mexico

C-144

Form C-144 Revised August 1, 2011

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

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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or					
Proposed Alternative Method Permit or Closure Plan Application					
Type of action: Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method					
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.					
Operator: XTO Energy, Inc OGRID #: 5380					
Address: 200 N. Loraine, Suite 800 Midland, TX 79701					
Facility or well name: Nash Unit #29					
API Number: 30-015-29434 OCD Permit Number:					
U/L or Qtr/Qtr J Section 13 Township 23S Range 29E County: Eddy					
Center of Proposed Design: Latitude N 32.30322 Longitude W 103.93719 NAD: ☐1927 🔀 1983					
Surface Owner: X Federal State Private Tribal Trust or Indian Allotment					
Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: Drilling Workover Permanent Emergency Cavitation P&A X Other: Modular impoundment for temporary storage of treated produced water Vertical steel foam-insulated panels Vertical steel foam-insulated panels					
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other					
Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other					
Liner Seams: Welded Factory Other					
4. Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume:					
5.					
Alternative Method: Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.					

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks) Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church) Four foot height, four strands of barbed wire evenly spaced between one and four feet Alternate. Please specify Modular impoundment walls are 12 feet high; no fencing necessary.				
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) Screen Netting Other Monthly inspections (If netting or screening is not physically feasible)				
Signs: Subsection C of 19.15.17.11 NMAC ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers ☐ Signed in compliance with 19.15.16.8 NMAC See photos in Appendix SSI-1				
9. Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	office for			
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.				
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.	☐ Yes ☒ No EE FIGURES 1a,1b			
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site				
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image				
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA			
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	Yes No SEE FIGURE 4			
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No SEE FIGURE 5			
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes 🛛 No SEE FIGURE 6			
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	Yes X No SEE FIGURE 7			
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map				
Within a 100-year floodplain FEMA map	Yes X No SEE FIGURE 9			

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC
and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number: or Permit Number:
12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number:(Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
13. Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Fach of the following items must be attached to the application. Please indicate by a check mark in the box that the documents are
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Climatological Factors Assessment ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
Quality Control/Quality Assurance Construction and Installation Plan
 Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan ☐ Emergency Response Plan
Oil Field Waste Stream Characterization
☐ Monitoring and Inspection Plan ☐ Erosion Control Plan
Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.
Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System Alternative Modular impoundment for temporary storage of treated produced water
Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only)
☐ On-site Closure Method (Only for temporary pits and closed-loop systems) ☐ In-place Burial ☐ On-site Trench Burial
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
15. Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
 ☑ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC ☑ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.1 Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if facilities are required.	NMAC) nore than two			
Disposal Facility Name: Disposal Facility Permit Number:				
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations? Yes (If yes, please provide the information below) \sum No				
Required for impacted areas which will not be used for future service and operations: Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC				
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.				
Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA			
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA			
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA			
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No			
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image				
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site				
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality				
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No			
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division				
 Within an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map 	☐ Yes ☐ No			
Within a 100-year floodplain FEMA map	☐ Yes ☐ No			
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved) Soil Cover Design - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC				

Operator Application Certification: I hereby certify that the information submitted with this application is true, accurate and complete to the best of	my knowledge and belief.			
Name (Print): David Luna Title: Operation	ns Engineer			
Signature: Date: 06/13	/2012			
e-mail address: David_Luna@xtoenergy.com Telephone: 432-62	20-6742			
OCD Approval: Permit Application (including closure plan) [Closure Plan (only) [OCD Condition (including closure plan) [OCD Condition (including closure plan				
OCD Representative Signature:	proval Date:			
Title: Environmental Engineer OCD Permit Number:				
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an opproved closure plan has been obtained and the closure activities have been completed. Closure Completion Date:				
Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste If different from approved plan, please explain.	ste Removal (Closed-loop systems only)			
23. Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings we two facilities were utilized.	ere disposed. Use attachment if more than			
Disposal Facility Name: Disposal Facility Permit Nur	mber:			
Disposal Facility Name: Disposal Facility Permit Nur				
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for Yes (If yes, please demonstrate compliance to the items below) \(\subseteq\) No	or future service and operations?			
Required for impacted areas which will not be used for future service and operations: Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique				
Closure Report Attachment Checklist: _Instructions: Each of the following items must be attached to the climark in the box, that the documents are attached. Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closure) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation)				
On-site Closure Location: LatitudeLongitude 25.	NAD: 1927 1983			
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure report is true, accurate and combelief. I also certify that the closure complies with all applicable closure requirements and conditions specified in	plete to the best of my knowledge and in the approved closure plan.			
Name (Print): Title:	· · · · · · · · · · · · · · · · · · ·			
Signature: Date:				
c-mail address: Telephone:				

Survey Information

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION 2040 South Pacheco Santa Fe, NM 87505 Form C-102

Revised October 18, 1994

Instructions on back
Submit to Appropriate District Office

State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number
30-015-29434

Property Code
010735

NASH UNIT

Operator Name

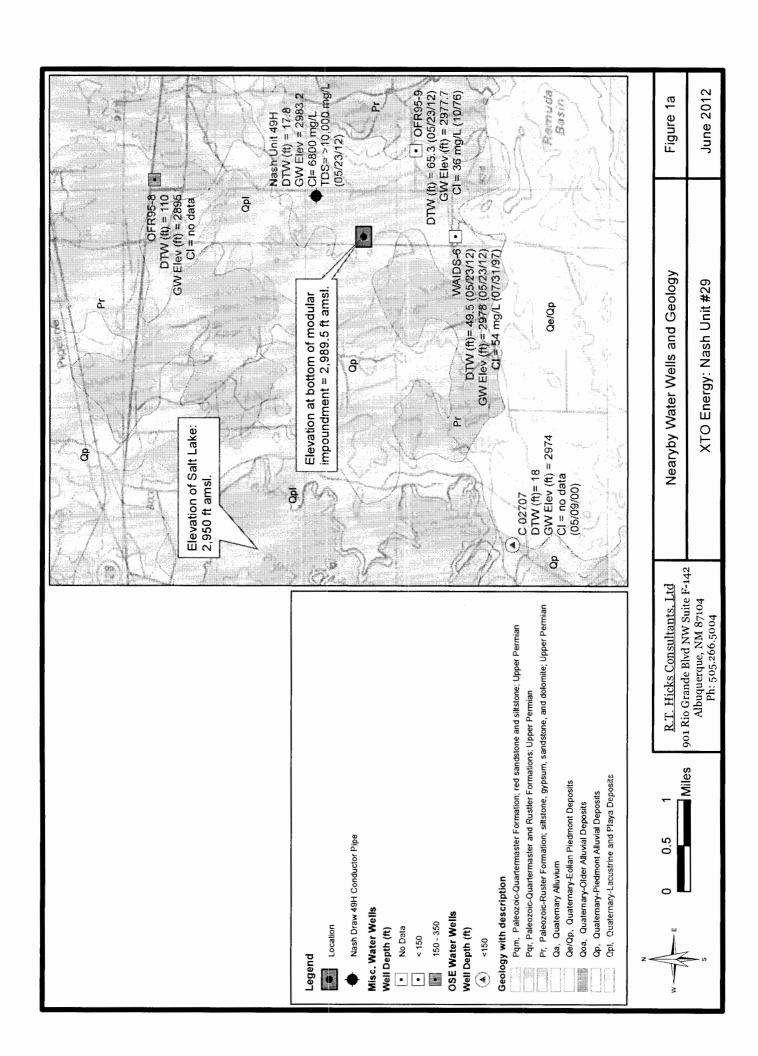
OGRID No. ² Operator Name * Elevation 021712 STRATA PRODUCTION 2991. 10 Surface Location North/South line UL or lot no. Section Lot Idn Feet from the Feet from the East/West line Township Range County SOUTH J 13 23-S 29~E 1980 2310 EAST **EDDY** 11 Bottom Hole Location If Different From Surface UL or lot no. Township Lot Ida Feet from the North/South line Feet from the East/West line County Section Range 14 Consolidation Code 15 Order No. 12 Dedicated Acres " Joint or Infill N U 40.00

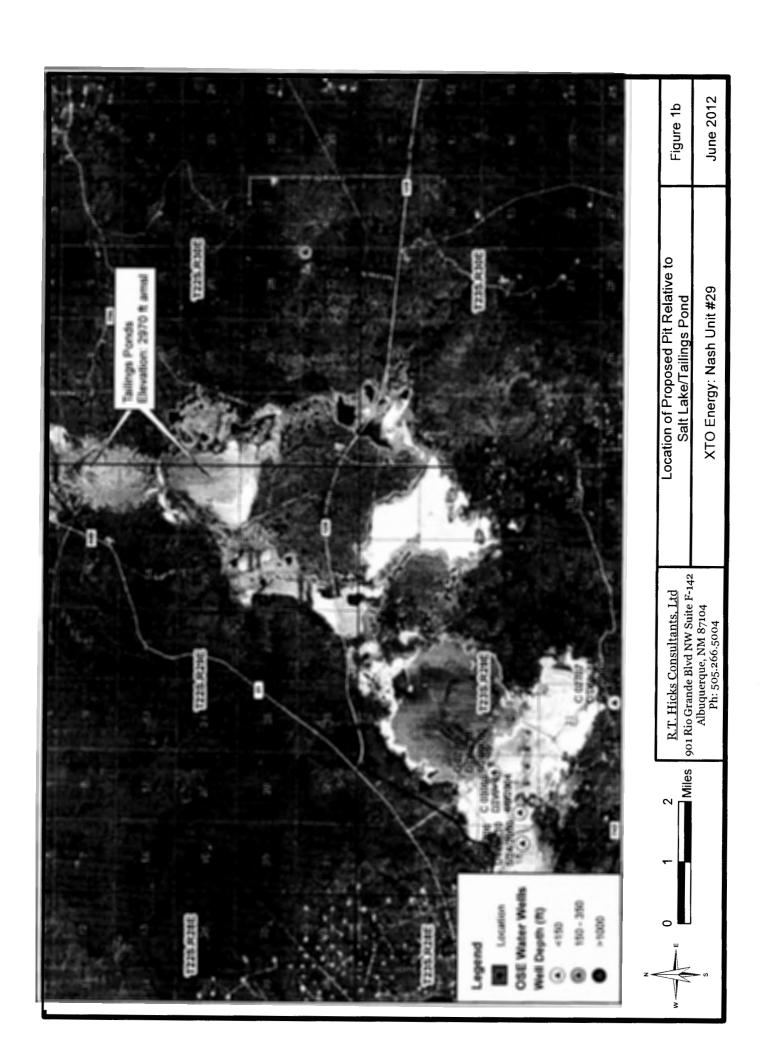
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A
NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

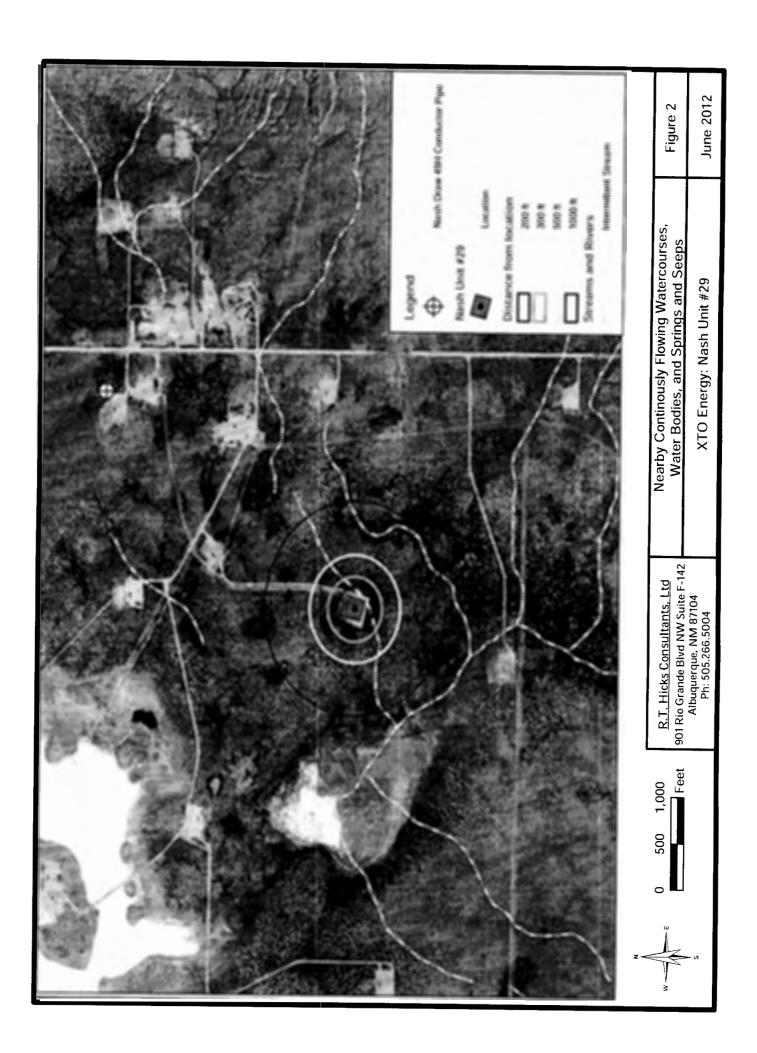
16			¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief
			Gral (). Darin s ignature CAROL J. GARCIA
			Printed Name PRODUCTION RECORDS MANAGER itle
	•		JANUARY 15, 1997 r
	0	2310	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and
			NOVEMBER 26, 1996 ate of Survey R. R. F. E. D. D.
	,386,		Signature and Scal of Professional Surveyer:

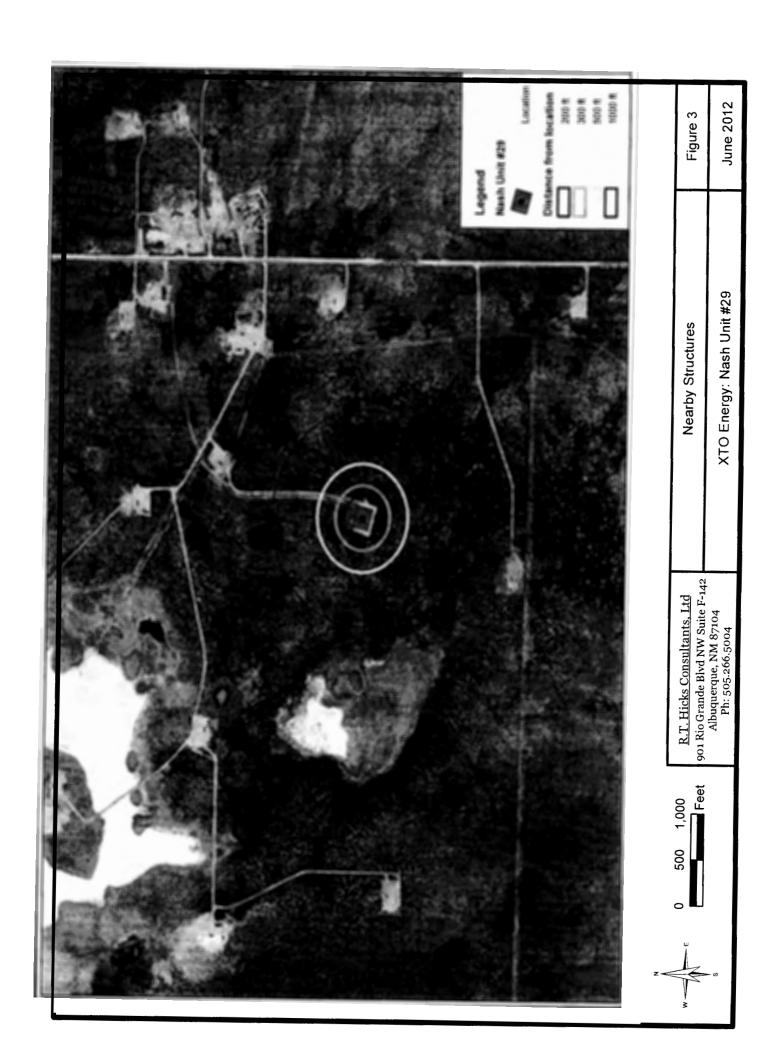
Site Specific Information

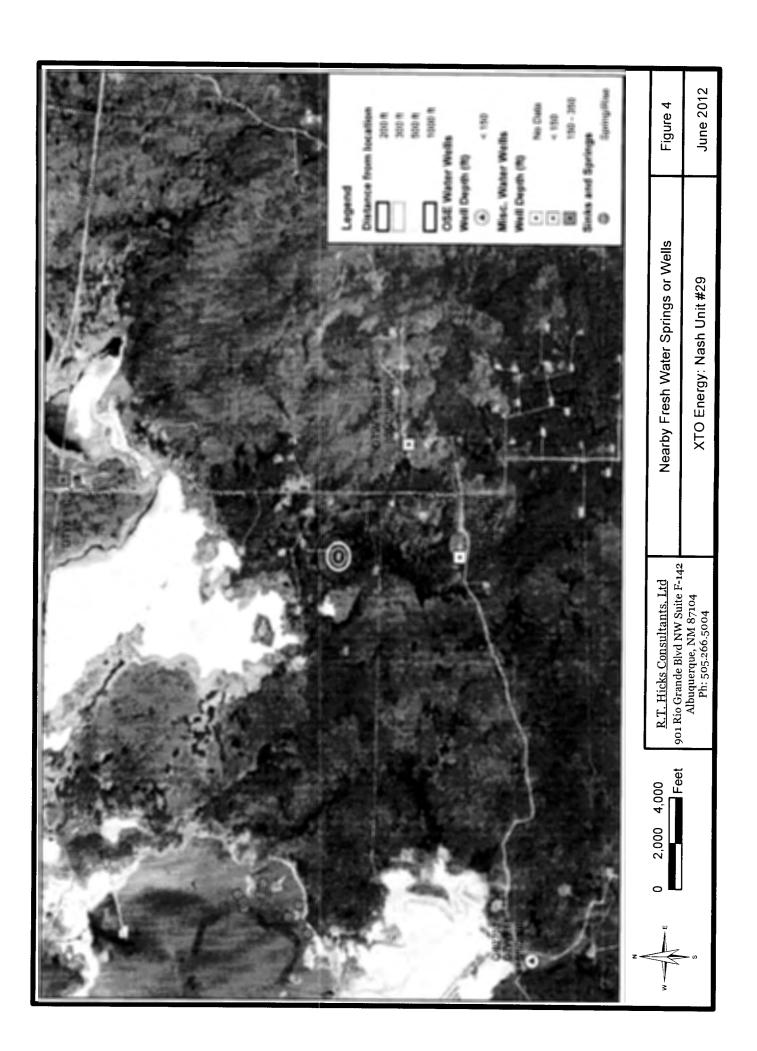
- > Figures 1 9
- Siting Compliance Demonstration
- Design and Construction Demonstration
- Operational Compliance
- Closure Requirements

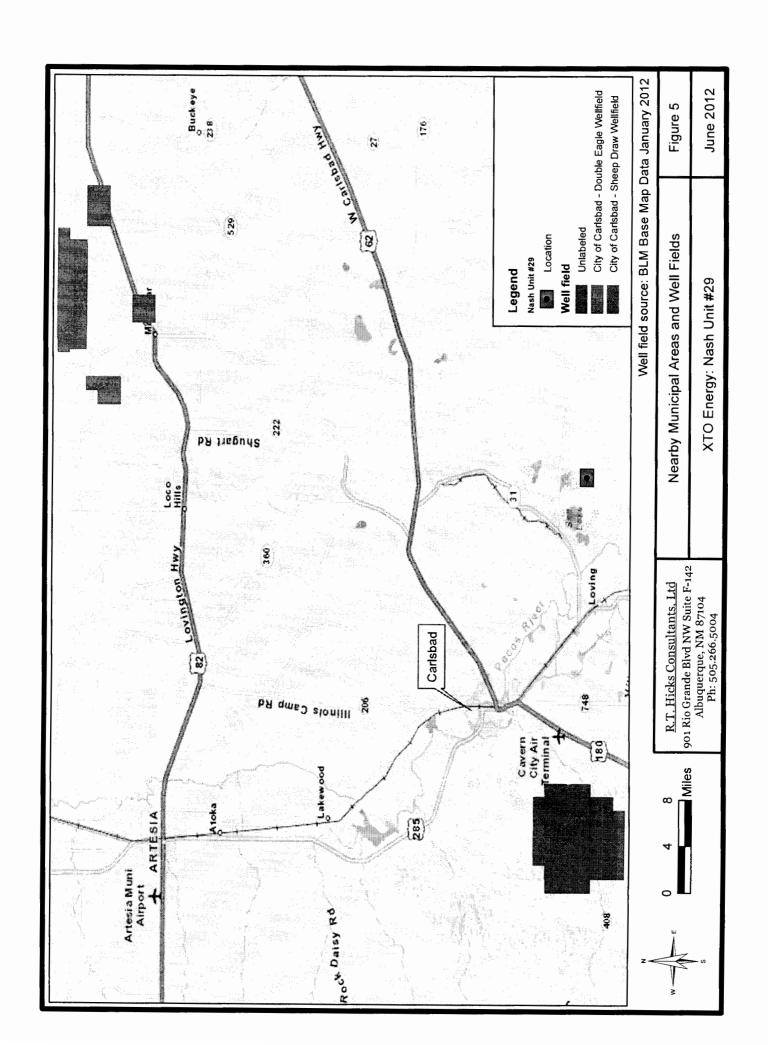














U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands

May 10, 2012

Wetlands

Freshwater Emergent

Freshwater Forested/Shrub

Estuarine and Marine Deepwater

Estuarine and Marine Freshwater Pond

Riverine -ake

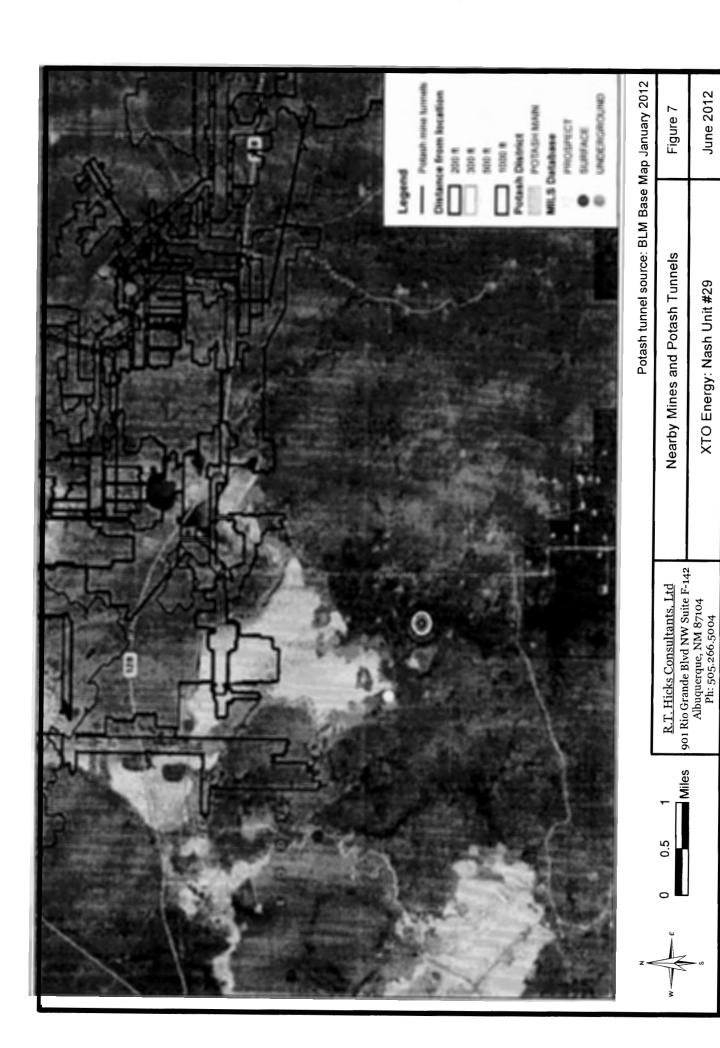
Other

Riparian

Herbaceous Forested/Shrub

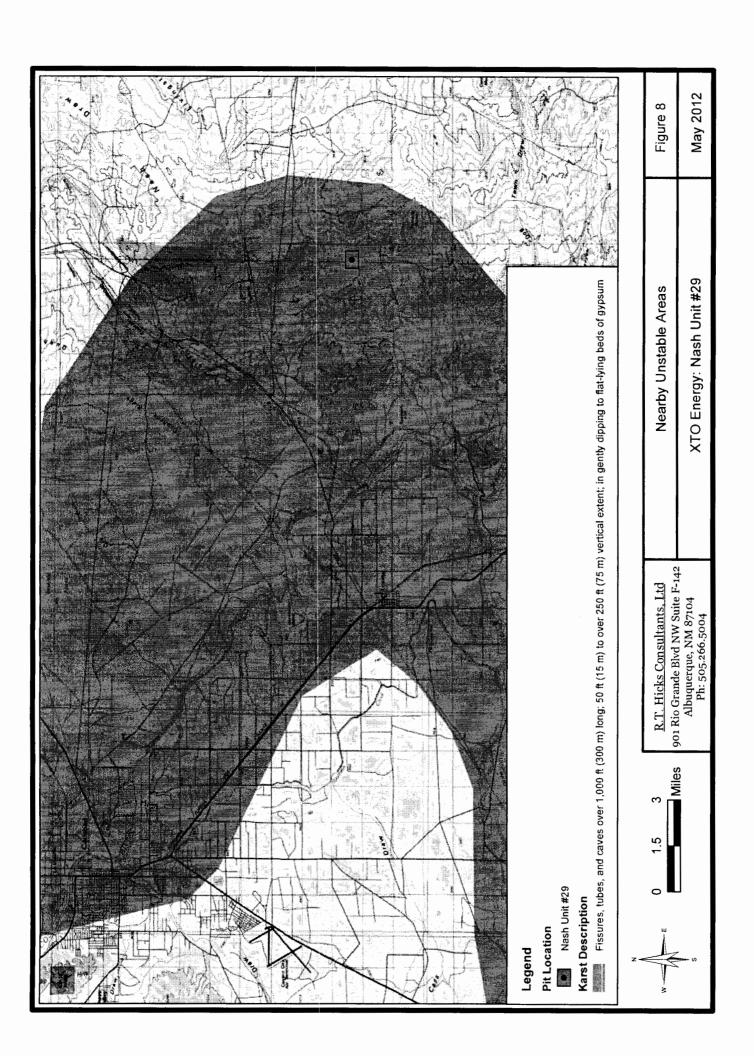
User Remarks:

Figure 6



June 2012

XTO Energy: Nash Unit #29



FEMA Flood Map Figure 9

Siting Criteria (NMAC 19.15.17.10) with hydrogeologic report for depth to groundwater compliance demonstration

Figure 1a - 1b, Appendix SSI-1 (Site Visit Photos), and the hydrogeologic data presented below demonstrates that groundwater (fresh water as defined by NMOCD Rules that has a TDS < 10,000 mg/L) at the location is between 50 and 100 feet below the bottom of the temporary pit.

- a. The location of the modular impoundment that shall temporarily store treated produced water is plotted as an orange rectangle with a black dot in the center (Figures 1a and 1b).
- b. Water wells in the OSE database are shown as color coded circles as defined by the total depth of the well. OSE well labels include the permit number, depth to groundwater (ft) and date of measurement some OSE wells are mis-located in the WATERS database as older wells are plotted in the center of the quarter quarter of the Section Township and Range.
- c. Water wells in the Go-Tech WAIDS database and Open File Report 95 are color coded squares defined by the total depth of the well as shown in Figures 1a and 1b. The closest fresh water well listed in publicly available databases is about 0.97 miles southeast of the modular impoundment.

Geology

The modular impoundment is located on Quaternary-Piedmont alluvial deposits (Figure 1a). The elevation at the bottom of the modular impoundment is 2,989.5 feet amsl. Underlying the alluvial deposits is the Rustler Formation that is composed of anhydrite, gypsum, interbedded sandy clay and shale, and irregular beds of dolomite. The Rustler overlies the Salado Formation.

The basal beds of the Rustler (Virginia Draw Member, Prv in OF-GM-77) consist of porous gypsum in a large part of Nash Draw and southwest to Malaga Bend. Hendrickson and Jones (1952) state that these basal beds commonly contain brine saturated with sodium chloride. The brackish groundwater within Nash Draw (in the alluvium and lower Rustler) flows southwest past what is mapped as a Salt Lake and discharges into the Pecos River near Malaga Bend.

Above the basal brine aquifer in the Rustler is the 35-foot thick unit of dolomitic limestone at the top of the lower part of the Rustler (probably the Culebra Dolomite, Prc). Fluid from this brackish aquifer is used by the potash mines to sluice tailings (Hendrickson and Jones, 1952).

Overlying the Rustler are Quaternary alluvial, lacustrine and piedmont deposits. Figure 1a shows that the modular impoundment lies on piedmont deposits (Qp) with playa/lacustrine deposits (Qpl) to the west and north and exposures of Rustler to the southeast and southwest.

Groundwater Elevations and Chemistry

Groundwater data from water wells near the modular impoundment location are shown on Figure 1a and 1b. Figure 2 shows that the Salt Lake/tailing pond, approximately 1,400 feet west of the modular impoundment location, is influenced by fluids from a nearby potash mine/mill (Figure

lb). In the upper central portion of the aerial photograph (Figure 1b); evidence of the tailings pile is clear – fluids emanating from the mill flow into the Salt Lake/tailing ponds along with occasional stormwater runoff. The fluids in the Salt Lake/tailings pond are a source of recharge to groundwater. As will be discussed below, TDS concentrations at Nash Unit #49H (3,250 feet to the east) provide evidence of the recharge effect on groundwater quality. The modular impoundment site is located even closer to the Salt Lake/tailings pond (about 1,400 feet east). Because concentrations will decrease continuously with distance from the Salt Lake/tailings pond due to dispersion, it is expected that concentrations in groundwater will be higher than those at Nash Unit #49H.

Water data within 1-mile

Hicks Consultants gauged and sampled groundwater from the recent drilling of the rathole (TD = 50 feet) at Nash Unit 49H, approximately 0.6 miles northeast of the modular impoundment. Brackish groundwater is present at 17.8 feet below ground surface (2,983.2 ft amsl). Chloride field titration exhibited 6,800 mg/L. A subsequent Hicks Consultants gauging event on May 23, 2012 of the conductor pipe at Nash Draw 49H exhibited TDS readings exceeding 10,000 ppm (Hanna pH/EC/TDS meter, model HI 87130).

Approximately 1-mile south of the modular impoundment is a water well (WAIDS-6) listed in Go-Tech's WAIDS database. This well is listed as a stock well completed within the Rustler formation; the WAIDS database provides no total depth or depth to groundwater data. However, the WAIDS reports a chloride concentration of 54 mg/L (07/31/1997). Hicks Consultants measured the depth to groundwater on May 23, 2012 at 49.5 feet below ground surface (2,978 ft amsl).

Approximately one mile southeast of the modular impoundment, Open File Report -95³ describes a stock well (OFR95-9) completed within the Rustler formation with a depth to groundwater of 54.9 feet (10/1977) and a total well depth of 59.6 feet. The WAIDS database lists total depth of the well at 100 feet (12/10/76) with a chloride concentration of 36 mg/L. Hicks Consultants measured this well on May 23, 2012 with a depth to groundwater of 65.3 feet (2,977.7 feet amsl).

Water data beyond 1-mile

Approximately 2.3 miles north-northeast of the modular impoundment, New Mexico Bureau of Mines and Mineral Resources Open File Report -95 shows a well (OFR95-8) with a depth to groundwater of 110 feet below ground surface (2,895 ft amsl) and a total depth of 200 feet. Chloride data for this well does not exist. The difference between groundwater elevation at OFR95-8 and the bottom of the modular impoundment is approximately 95 feet. Therefore, we believe that groundwater that has the potential to be protectable (<10,000 mg/L TDS) exists between 50 and 100 feet below the modular impoundment.

Approximately three miles southwest of the modular impoundment, the OSE database describes well C 02707 with a depth to groundwater at 18 feet below ground surface (2,974 ft amsl) and a total depth of 40 feet. No chloride data exists for this well

³ http://geoinfo.nmt.edu/publications/openfile/details.cfml?Volume=95

Approximately 4.8 miles west of the modular impoundment, the OSE database describes well C 02706 with a depth to groundwater at 10 feet below ground surface (2,942 ft amsl) and a total depth of 17 feet (Figure 1b). Water quality data from WAIDS database shows chloride concentrations ranging from 98,000 mg/L to 203,700 mg/L with an average concentration of 155,200 mg/L. The high chloride concentrations in groundwater within the alluvial sediments near the Salt Lake/tailings pond are consistent with the sources of this fluid.

Conclusion

The two wells and the rathole within 1-mile of the location (WAIDS-6, OFR95-9, Nash Unit #49H) suggest a local groundwater gradient to the southwest, consistent with local topography and regional southwest gradient (Hendrickson and Jones, 1952). Groundwater elevations in these wells range from 2,978 to 2,983 ft amsl and are considered to be within the same shallow groundwater zone less than 50 feet below ground surface. Subtracting the above groundwater elevations from the elevation of the bottom of the modular impoundment suggests that groundwater beneath the location is approximately 6 to 11 feet below ground surface.

Furthermore, TDS concentrations greater than 10,000 mg/L at Nash Unit #49H demonstrate that the shallow groundwater zone is impacted by the Salt Lake/tailing pond 3,250 feet to the west (Figure 2). The modular impoundment site is about 1,400 feet east from the Salt Lake/tailing pond, about 1,800 feet closer to the Salt Lake/tailing pond than Nash Unit #49. Because the concentration gradient from the Salt Lake/tailing pond will decrease continuously with distance from the pond due to dispersion, groundwater beneath the site will have higher concentrations than the groundwater at Nash Unit #49H. Groundwater exhibiting TDS concentrations greater than 10,000 mg/L is not defined as fresh water by 19.15.2.7.F (3) NMAC and is therefore not protectable. Because concentrations will be higher than those at Nash Unit #49H (TDS >10,000mg/L), the groundwater beneath the modular impoundment site is not protectable by 19.15.7.2.F(3) NMAC.

The next groundwater zone that may exist is between 50 to 100 feet below the modular impoundment. Evidence of this groundwater zone is exhibited at OFR95-8, 2.3 miles north of the location. Groundwater data at OFR95-8 suggest the difference between groundwater elevation at OFR95-8 and the bottom of the modular impoundment is approximately 95 feet. Therefore, we believe that groundwater that has the potential to be protectable (TDS < 10,000 mg/L) exists between 50 and 100 feet below the modular impoundment.

Siting Criteria Compliance Demonstration – continued (NMAC 19.15.17.10)

The information identified in Item 10, "Siting Criteria" of the C-144 is presented below. The descriptions below are associated with the maps presented in Figures 2-9, attached.

Figure 2 --- Demonstrates that the location is not within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- a. Data from the USDA's National Hydraulic Dataset shows an intermittent stream (shown as a light blue dotted line in Figure 2) transecting the location.
- b. Site reconnaissance identified no evidence of a watercourse as defined by NMAC 19.15.2.7.
 Photo 1, at right, shows the location of the "intermittent stream" identified by the USDA.
 As shown in Photo 1, no watercourse was identified having definite banks and beds with visible evidence of the occasional flow of water.
- c. No other watercourses, water bodies, springs, or seeps exist with 200-feet of location.



Photo 1: Photo of USDA identified intermittent stream. No definite banks and beds with visible evidence of occasional flow of water were identified.

Figure 3 --- Demonstrates that the location is not within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. No nearby structures exist within 300 feet of location.

- a. As shown on the aerial photograph, no structures exist within 300 feet of the location.
- b. Site reconnaissance supports this conclusion.

Figure 4 --- Demonstrates that the location is not within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- a. The closest spring is approximately 2.3 miles northwest located within the Salt Lake of the potash mining district.
- b. The closest water well listed in public files is approximately 0.9-mile southeast of the location.

Figure 5 --- Demonstrates that the location is not within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- a. The closest incorporated municipality is Loving, NM; approximately 9 miles west.
- b. The closest well field is approximately 23.5-miles west of the location.

Figure 6 --- Demonstrates the location is not within 500 feet of wetlands.

- a. The US Fish and Wildlife Wetlands Inventory does not identify wetlands within 500 feet of location.
- b. Site reconnaissance identified no wetlands with 500 feet of location.

Figure 7 --- Shows that the location is within the Potash Mining District.

- a. The closest potash mining tunnel is 1.5 miles north-northwest of the location. The closest
 - surface mining location is 0.7 miles northwest. The MILS database lists the surface mine as a Prospect.
- b. The construction of the modular impoundment will not require more than 18 inches excavation into the subsurface. The existing production pad consists of 6 inches of caliche on top of very dense clay (Photo 2). We conclude the construction of the modular impoundment will not compromise the subsurface integrity.



Photo 2: 6-inch caliche pad thickness. Dense clay underlies the pad.

Figure 8 --- Shows that the location may lie within an unstable area

- a. The location is located within a known karst area identified by the USGS. Site reconnaissance observed no evidence of kart features (fissures, tubes, or caves) near the location.
- b. The above ground modular impoundment will be placed upon a 6-inch caliche production pad. The production pad covers approximately 1.2 acres. Beneath the production pad is very dense clay.
- c. The composition of the production pad and the underlying dense clay provides engineered surface stability to ensure that the modular impoundment's integrity is not compromised.

Figure 9 --- Demonstrates that the location is not within a 100-year floodplain.

a. The location is within Zone X of FEMA Flood Zone Designation. Zone X is defined as an area of minimal flood hazard and above the 500-year flood level.

Design and Construction Specifications (NMAC 19.15.17.11)

A. General Specifications. An operator shall design and construct a pit, closed-loop system, below-grade tank or sump to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.

Response -

XTO Energy shall construct a modular impoundment fluid storage system provided by

Poseidon Concepts. The modular impoundment system model is the Atlantis⁴. Photo 3, right, is an example of Poseidon's modular impoundment. The modular impoundment shall be constructed according to manufacturer's specifications as described in Section 19.15.17.11.F, below. The modular impoundment is



Photo 3: Example of Poseidon's fluid storage system.

engineered to prevent contamination of fresh water and protect public health and the environment.

The purpose of the modular impoundment is the temporary storage of treated produced water in a centralized location for six off-site well stimulations. The modular impoundment shall be constructed on an existing well pad currently used for operation and maintenance of the Nash Unit #29 well. XTO Energy shall restore the production pad to pre-existing condition prior to the installation of the modular impoundment.

B. Stockpiling of topsoil.

Response -

The modular impoundment shall be constructed on an existing production pad at Nash Unit #29. No additional surface disturbance shall occur. After modular impoundment closure, the production pad will remain in-place until proper abandonment of the production well.

C. Signs.

Response -

The existing sign at Nash Unit #29 production well, which is on the same production pad as the proposed location, shall be used. Photo 4 is a photograph of



Photo 4: Sign at Nash Unit #29 to be used in conjunction with the modular impoundment.

⁴ http://poseidonconcepts.com/Customer-Centre/Models/index.php

the existing sign.

D. Fencing.

Response -

As described in Section 19.15.17.11.F, below, the modular impoundment is constructed with 12-foot high steel walls. In lieu of fencing to prevent unauthorized access and exclude entry of livestock, XTO Energy asks for administrative approve to use the modular impoundment's steel 12-foot high walls as an alternative to fencing. XTO Energy concludes that the 12-foot high steel walls are superior to fencing.

- **F.** Temporary Pits. The operator shall design and construct a temporary pit in accordance with the following requirements.
 - (1) The operator shall design and construct a temporary system to ensure the confinement of liquids to prevent unauthorized releases.

Response -

The modular impoundment system is constructed from 5/8" thick steel welded to 4"x4"x144" vertical steel supports (see Photo 5) and is engineered to withstand the hydrostatic pressures exerted downwards and outwards by the weight of the fluid when full. The panels are connected with 1" thick steel plates that fit over solid steel "bosses" welded to the modular impoundment wall. These plates are then locked to the bosses with locking pins. The locking pins are secured with safety cotter pins (see Appendix

SSI-2 for interlocking panel details and patent). The 30 mil LLDPE liner is then clamped to the top of these walls leaving an extra 2 feet of liner material hanging outside of the modular impoundment to provide a safety margin (Photo 6, below).

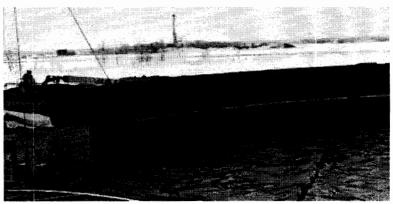


Photo 5: Interlocking panels of the modular impoundment.

The modular impoundment system was

designed and engineered by Beck Engineering, Ltd for Poseidon Concepts. A letter from Beck Engineering (see Appendix SSI-2) is stamped by a Professional Engineer and confirms that the modular impoundment is structurally designed to resist all anticipated forces on the modular impoundment panels and panel connections from the start of erection to the complete filling of the modular impoundment. The modular impoundment is patented in Canada. Patent is pending for the United States. Therefore, Poseidon will not release schematics of the modular impoundment design until patenting in the United States is complete.

During installation, a representative from Poseidon shall be present. Appendix SSI-3 contains the set-up procedures. The set-up procedures were provided by Poseidon.



Photo 6: Clamping system holding liner in place. Spacing between clamping is 3-feet.

(2) A temporary pit shall have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. The operator shall construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V). The appropriate division district office may approve an alternative to the slope requirement if the operator demonstrates that it can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.

Response -

The modular impoundment shall be placed on the existing Nash Unit #29 production pad. The existing production pad is constructed of approximately 6-inches of caliche overlying very dense clay (see Photo 2).

Prior to installation, the production pad will be prepared to make it smooth and free of rocks. A minimum of 10 oz. per square foot nonwoven geotextile material from Brawler (product WID10, see Appendix SSI-2) shall be placed between the production pad and the liner of the modular impoundment to prevent liner rupture or tear from the underlying pad.

In lieu of slopes no greater than 2H:1V, XTO Energy asks for administrative approval for vertical slopes (steel walls) engineered for the modular impoundment. The modular impoundment's vertical steel walls are constructed from 5/8" thick steel welded to 4"x4"x144" vertical steel supports (see Photo 5) and is engineered to withstand the hydrostatic pressures exerted downward and outward by the weight of the fluid when full. The panels are connected with 1" thick steel plates that fit over solid steel "bosses" welded to the modular impoundment wall. These plates are then locked to the bosses

with locking pins. The locking pins are secured with safety cotter pins. Modular impoundment integrity will not fail or collapse because of the engineered design specifications.

A sump area in the configuration of a "Y", with each leg approximately 15 feet long, shall be excavated into the production pad to accommodate the modular impoundment suction pipes. The sump area is excavated 18 inches below the elevation of the production pad. The sump walls shall be no greater than 2H:1V sloping on the sides of the sump area, and an additional layer of the 10 oz. per square foot nonwoven geotextile material, as well as visual inspection, after excavation but prior to installation, to be sure that the underlying soil represents a property constructed smooth foundation free of rocks.

(3) The operator shall design and construct a temporary pit with a geomembrane liner. The geomembrane liner shall consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.

Response -

In lieu of a 20-mil string reinforced LLDPE liner, XTO Energy asks for administrative approval for a stronger and thicker 30 mil LLDPE liner. The liner material used for the modular impoundment is a 30-mil LLDPE material provided by GSE. See Appendix SSI-2 for specifications and data sheets on the GSE 30 mil UltraFlex Smooth Geomembrane liner. The liner is resistant to petroleum hydrocarbons, salts and acidic, alkaline solutions, and ultraviolet light. The 30 mil GSE liner is equivalent to or better than a 20-mil string reinforced LLDPE liner.

(4) The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.

Response -

The liner is manufactured with factory welds and seams going in one direction. The east and west oriented liner panels have a maximum width of 25-feet with 5-inch seams (see liner seam orientation diagram in Appendix SSI-4). The interior panels shall be 24.6-feet wide; with the width of one of the two middle panels adjusted to ensure that the overall dimension of the liner is 190x190 feet. All factory welds are designed according to GSE manufacture specifications and are engineered to withstand the weight of the water.

The outermost east- west panel liner seams are approximately 7-feet on the north-south axis from the floor-wall junction of the modular impoundment. The seam pattern, panel widths, and seam orientation will minimize liner seams and will orientate the seams up and down, not across the slope (steel walls).

(5) Construction shall avoid excessive stress-strain on the liner.

Response -

In accordance with the set-up procedures (Appendix SSI-3), additional 10oz per square foot geotextile material is placed on any "pinch point" where the liner could either have direct contact with the walls or become pinched between walls and/or the walls and the ground, the sump area, and the C-clamps holding the liner to the top of the modular impoundment.

As shown on the liner seam orientation diagram in Appendix SSI-4, all of the seams of the 25-foot wide panels are in an east-west orientation. Hence, all of the seams run up and down the vertical slopes rather than across the slopes. On the north-south axis, the closest east-west seam to the bottom wall corner is 7-feet. This seam orientation prevents undue stresses and stain on the liner material and seams.

(6) Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.

Response -

A 10 oz. per square foot nonwoven geotextile shall be placed between the production pad and the liner and at pinch-points where the liner could either have direct contact with the walls or become pinched between walls and/or the walls and the ground, including the C-clamps holding the liner to the top of the modular impoundment. An additional second geotextile layer shall be placed between the sump areas and the LLDPE liner.

(7) The operator shall anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.

Response -

In lieu of an anchor trench, XTO Energy asks for administrative approval to use C-clamps to anchor the liner to the top of the modular impoundment (see Photo #6). The purpose of the clamps is to prevent the liner material from falling in and compromising the ability of the modular impoundment to contain fluids.

Each 3-foot clamp section is separated by three foot spacing. The sequence is repeated along the top of the modular impoundment. The liner overlaps the modular impoundment by at least 24 inches, providing a robust safety factor if the liner should need adjustment after installation.

(8) The operator shall ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit.

Response -

The intake pipe for the suction system will sit on the floor in the sump area. The suction intake is a 15-foot long pipe with legs (to prevent rotation) and has horizontal slots for the fluid that are 4-inches up the side of the pipe. The suction pipe riser is a 10-inch pipe that

mounts to the top of the modular impoundment and descends down the exterior wall (Photo #7) and connects to a pump.

The 4-inch filler pipes mount to the top of the modular impoundment in similar fashion to the suction pipe. The discharge end of the filler pipe is 4-inches from the bottom of the modular impoundment.

One suction pipe and four filler pipes shall be installed on the modular impoundment.

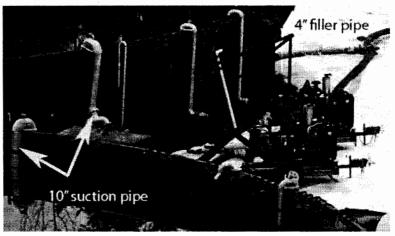


Photo 7: Photograph of the suction and filler pipes.

(9) The operator shall design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion shall surround a temporary pit to prevent run-on of surface water. During drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig is not required to have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.

Response -

A 2-foot high berm shall be constructed around the modular impoundment to prevent run-on of surface water. As there are no drilling or workover operations at the location, the berm will surround the entire modular impoundment. A 2-foot freeboard shall be maintained to prevent overflow.

(10) The volume of a temporary pit shall not exceed 10 acre-feet, including freeboard.

Response -

The volume (full capacity) of the modular impoundment plus the three 18-inch deep by 15-foot long sump areas is less than 42,000 bbls (about 5.5 acre-feet). During normal operation, the modular impoundment will hold less water to allow for 2-feet of freeboard.

Operational Requirements (NMAC 19.15.17.12)

Note: The modular impoundment will contain treated produced water. Between well stimulations, the modular impoundment will contain enough treated produced water to hold down the liner. Weekly inspections shall occur when there is 1-foot depth or less of treated produced water in the modular impoundment. Daily inspections shall occur when there is greater than 1-foot depth of treated produced water in the modular impoundment.

- **A. General Specifications**. XTO Energy shall maintain and operate the modular impoundment according to manufacturer's operating and maintenance specifications as described in Section 19.15.17.12.B, below.
 - (1) The operator shall operate and maintain a pit to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment.

Response -

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations. XTO Energy shall inspect the modular impoundment for liner integrity, to ensure that a 2-foot freeboard is maintained, and to inspect berm stability around the modular impoundment to protect from surface water run-on/run-off.

(2) The operator shall recycle, reuse, reclaim or dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment.

Response -

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations. Unused treated produced water, if present, will be sent to XTO Energy's SWD-53 well for recycling or a division-approved disposal facility. Proper disposal of excess treated produced water prevents the contamination of fresh water and protects public health and the environment.

(3) The operator shall not discharge into or store any hazardous waste in a pit, closed-loop system, below-grade tank or sump.

Response -

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations.. XTO Energy shall not discharge hazardous waste into the modular impoundment.

(4) If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator shall notify the appropriate division

district office within 48 hours of the discovery and repair the damage or replace the liner.

Response -

If the liner integrity is found to be compromised during an inspection, XTO Energy shall notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.

(5) If a pit, below-grade tank, closed-loop system or sump develops a leak, or if any penetration of the pit liner, below-grade tank, closed-loop system or sump occurs below the liquid's surface, then the operator shall remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the pit liner, below-grade tank, closed-loop system or sump.

Response -

If the modular impoundment contains any volume of liquid and liner integrity is found to be compromised below the liquid's surface, XTO Energy shall remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the modular impoundment.

(6) The injection or withdrawal of liquids from a pit shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

Response -

Inspections shall verify that suction (intake), riser and filler pipes (see Photo #7) are intact and properly connected and secured.

The intake pipe for the suction system will sit on the floor in the sump area. The suction intake is a 15-foot long pipe with legs (to prevent rotation). The suction pipe riser is a 10-inch pipe that mounts to the top of the modular impoundment and descends down the exterior wall and connects to a pump.

The 4-inch filler pipes mount to the top of the modular impoundment in similar fashion to the suction pipe. The discharge end of the filler pipe is 4-inches from the bottom of the modular impoundment bottom to prevent damage to the liner by discharging operations.

(7) The operator shall operate and install a pit, below-grade tank or sump to prevent the collection of surface water run-on.

Response -

The modular impoundment's 12-foot high steel walls prevent the collection of surface water run-on. XTO Energy shall provide additional prevention to reduce

undercutting of the steel walls from surface water run-on by the construction of a 2-foot high berm along the bottom perimeter of the modular impoundment. Inspections shall verify that the berm surrounding the modular impoundment remains intact. Berm sections that lose integrity shall be repaired within 48 hours.

(8) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface

Response -

XTO Energy shall verify that no oil is on the modular impoundment surface. If oil is observed, the oil shall be removed using an absorbent boom or other device and properly disposed at an approved facility.

- **B.** Temporary pits. An operator shall maintain and operate a temporary pit in accordance with the following additional requirements
 - (1) Only fluids used or generated during the drilling or workover process may be discharged into a temporary pit. The operator shall maintain a temporary pit free of miscellaneous solid waste or debris. The operator shall use a tank made of steel or other material, which the appropriate division district office approves, to contain hydrocarbon-based drilling fluids. Immediately after cessation of a drilling or workover operation, the operator shall remove any visible or measurable layer of oil from the surface of a drilling or workover pit.

Response -

The modular impoundment shall be used for temporary storage of treated produced water for well stimulation. No other fluids other than treated produced water shall be discharged into the modular impoundment.

(2) The operator shall maintain at least two feet of freeboard for a temporary pit.

Response -

The modular impoundment shall be inspected daily by XTO Energy when containing more than 1-foot of treated produced water to ensure that a 2-foot freeboard is maintained.

(3) The operator shall inspect a temporary pit containing drilling fluids at least daily while the drilling or workover rig is on-site. Thereafter, the operator shall inspect the temporary pit weekly so long as liquids remain in the temporary pit. The operator shall maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator shall file a copy of the log with the appropriate division district office when the operator closes the temporary pit.

Response -

XTO Energy shall inspect the modular impoundment daily when containing more than 1-foot of treated produced water for: liner integrity, to ensure that a 2-foot freeboard is maintained, to prevent the presence of oil on the fluid surface, and to maintain berm stability around the modular impoundment to protect from surface water run-on/run-off. When less than one foot or less of treated produced water is present in the modular impoundment, XTO Energy shall inspect weekly. A log of these inspections shall be maintained by XTO Energy and made available upon division request. The log shall be filed with the modular impoundment closure report.

(4) The operator shall remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling or workover rig. The operator shall note the date of the drilling or workover rig's release on form C-105 or C-103 upon well or workover completion. The appropriate division district office may grant an extension of up to three months.

Response -

The purpose of the modular impoundment is to provide fluid for six off-site well stimulations. The modular impoundment is not associated with a drilling or workover rig. The anticipated duration of the six stimulations is approximately 4 months. After the transfer of treated produced water to the 6th off-site well stimulation is complete, XTO Energy shall within 30-days remove remaining treated produced water from the modular impoundment. The modular impoundment is not associated with a drilling or workover rig. Therefore, XTO shall mark the transfer completion date on the C-144 and C-105 in lieu of rig release date.

Closure Requirements (NMAC 19.15.17.13)

A. Time requirements for closure per NMAC 19.15.17.13.

(7) An operator shall close any other permitted temporary pit within six months from the date that the operator releases the drilling or workover rig. The appropriate division district office may grant an extension not to exceed three months.

Response -

After the transfer of treated produced water to the 6th off-site well stimulation is complete, XTO Energy shall within six months close the modular impoundment. The modular impoundment is not associated with any drilling or workover rig.

B. Closure methods for temporary pits.

- (1) Waste Excavation and removal
 - a) The operator shall close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a divisionapproved facility.

Response -

Prior to disassembly of the modular impoundment, any remaining treated produced water shall be removed and injected into XTO Energy's SWD-53 (API#: 3001539400).

After the remaining fluid is removed the liner material, geomembranes and non-reusable pipe (suction and filler pipes) shall be transported to one of the following division-approved facilities:

Controlled Recovery, Inc NM-01-0006

Lea Land, LLC NM-01-0035

Reusable pipes, pumps, and other components owned by Poseidon will be loaded onto Poseidon trailers and transported off site.

- **b)** The operator shall test the soils beneath the temporary pit to determine whether a release has occurred.
 - i. For temporary pits where ground water is between 50 and 100 feet below the bottom of the temporary pit or for cavitation pits allowed pursuant to Subparagraph (a) of Paragraph (1) of Subsection A of 19.15.17.10 NMAC, the operator shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for benzene, total BTEX, TPH, the GRO and DRO combined fraction and chlorides to demonstrate

that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 500 mg/kg or the background concentration, whichever is greater. The operator shall notify the division of its results on form C-141. The division may require additional delineation upon review of the results.

Response -

XTO Energy shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for benzene (EPA 8260B), total BTEX (EPA 8260B), TPH (EPA 418.1), the GRO and DRO combined fraction (EPA SW-846 method 8015M) and chlorides (EPA 300.1). XTO Energy shall notify the division of its results on form C-141.

c) If the operator or the division determines that a release has occurred, then the operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

Response -

If the division or XTO Energy determines that a release has occurred, XTO Energy shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

d) If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (b) of Paragraph (1) of Subsection B of 19.15.17.13 NMAC, then the operator shall backfill the temporary pit excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and revegetate the site. The division-prescribed soil cover, recontouring and revegetation requirements shall comply with Subsections G, H and I of 19.15.17.13 NMAC.

Response -

The modular impoundment is an above ground modular impoundment, no backfilling is necessary except the "Y" shaped sump area that has an excavated depth of 18-inches. The sump area will be filled with dense clay and topped with 6-inches of caliche to match existing production pad construction and grade. In lieu of revegetation, XTO Energy asks division approval for the reclamation of the sump area to pre-existing conditions – an active production pad for the Nash Unit #29 well. See 19.15.17.13.G, below.

G. Reclamation of pit locations, on-site burial locations and drying pad locations.

(1) Once the operator has closed a pit or trench or is no longer using a drying pad, below-grade tank or an area associated with a closed-loop system, pit, trench or below-grade tank, the operator shall reclaim the pit location, drying pad location, below-grade tank location or trench location and all areas associated with the closed-loop system, pit, trench or below-grade tank including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator shall substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC, recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and revegetate according to Subsection I of 19.15.17.13 NMAC.

Response -

The modular impoundment is an above ground fluid storage system, no backfilling is necessary except the "Y" shaped sump area that has a depth of 18-inches. The sump area shall be reclaimed to pre-existing conditions, an active production pad for the Nash Unit #29 well. The sump area shall be backfilled with dense clay and topped with 6-inches of caliche to match existing production pad grade. Revegetation of the sump area shall occur during reclamation activities for Nash Unit #29 plugging and abandonment per agreement with BLM (Appendix SSI-5).

(2) The operator may propose an alternative to the re-vegetation requirement if the operator demonstrates that the proposed alternative effectively prevents erosion, and protects fresh water, human health and the environment. The proposed alternative shall be agreed upon by the surface owner. The operator shall submit the proposed alternative, with written documentation that the surface owner agrees to the alternative, to the division for approval.

Response -

In lieu of re-vegetation, XTO Energy asks the division to allow interim reclamation to pre-existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Re-vegetation shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

H. Soil cover designs.

(1) The soil cover for closures where the operator has removed the pit contents or remediated the contaminated soil to the division's satisfaction shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

Response -

In lieu of soil cover, XTO Energy asks the division to allow interim reclamation to pre-

existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Soil cover shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

(3) The operator shall construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Response -

In lieu of soil cover, XTO Energy asks the division to allow interim reclamation to preexisting conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Proper soil cover construction shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

I. Re-vegetation.

Response -

In lieu of re-vegetation, XTO Energy asks the division to allow interim reclamation to pre-existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Re-vegetation shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

J. Closure notice.

(1) The operator shall notify the surface owner by certified mail, return receipt requested, that the operator plans to close a temporary pit, a permanent pit, a below-grade tank or where the operator has approval for on-site closure. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.

Response -

XTO Energy shall notify the surface owner by certified mail, return receipt requested, that XTO Energy plans to close a modular impoundment.

(2) The operator of a temporary pit or below-grade tank or an operator who is approved for on-site closure shall notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range. If the closure is associated with a particular well, then the notice shall also include the well's name, number and API number.

*Response -

XTO Energy shall notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range.

K. Closure report.

Within 60 days of closure completion, the operator shall submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable. In the closure report, the operator shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.

Response -

Within 60 days, XTO Energy shall submit a closure report on form C-144, with necessary attachments documenting all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling the sump area, capping and covering back to pre-existing conditions. In the closure report, XTO Energy shall certify that all information in the report and attachments are correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. XTO Energy shall provide a plat of the pit location on form C-105 within 60 days of closing the modular impoundment.

Appendix SSI-1Site Visit Photographs

Albuquerque, NM 87104

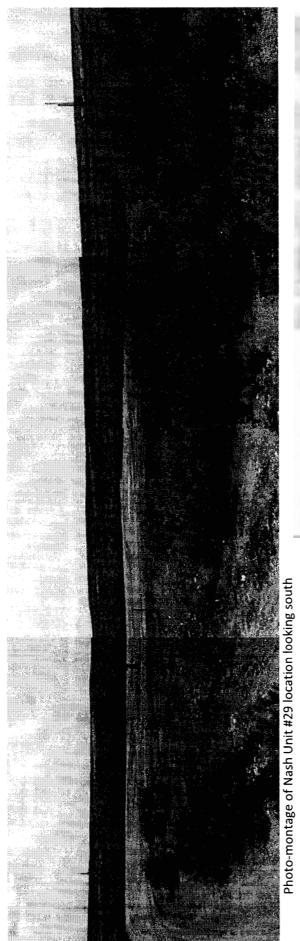


Photo-montage of Nash Unit #29 location looking south from a small rise. Temporary pit will lie on east (left) of the nad

East portion of photo-montage Topography is very flat and site inspections found no evidence of a continuously-flowing arroyo on southeast portion of pad.



Photograph showing sign in compliance with NMOCD Rules.

Appendix SSI-2

- > Canadian Patent
- Beck Engineering Letter
- Geotextile Specifications
- Liner Specifications



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Canadian Intellectual Property Office

An Agency of Industry Canada

Brevet canadien / Canadian Patent

🍁 Le commissaire aux brevets a reçu une demande de délivrance de brevet visant une invention. Ladite requête satisfait aux exigences de la Loi sur les brevets. Le titre et la description de l'invention figurent dans le mémoire descriptif, dont une copie fait partie intégrante du présent document.

Le présent brevet confère à son titulaire et à ses représentants légaux, pour une période expirant vingt ans à compter de la date du dépôt de la demande au Canada, le droit, la faculté et le privilège exclusif de fabriquer, construire, exploiter et vendre à d'autres, pour qu'ils l'exploitent, l'objet de l'invention, sauf jugement en l'espèce rendu par un tribunal compétent, et sous réserve du paiement des taxes périodiques.

The Commissioner of Patents has received a petition for the grant of a patent for an invention. The requirements of the Patent Act have been complied with. The title and a description of the invention are contained in the specification, a copy of which forms an integral part of this

document. The present patent grants to its owner and to the legal representatives of its owner, for a term which expires twenty years from the filing date of the application in Canada, the exclusive right, privilege and libetty of making, constructing and using the invention and selling it to othets to be used, subject to adjudication before any court of competent jurisdiction, and subject

BREVET CANADIEN

Date à laquelle le brevet a été

Date du dépôt de la demande

Date à laquelle la demande est

devenue accessible au public

accordé et délivré

pour consultation

2,692,016

to the payment of maintenance fees.

2011/07/19

2010/02/05

2010/07/05

Date on which the patent was granted and issued

Filing date of the application

CANADIAN PATENT

Date on which the application was made available for public inspection

Commissaire aux brevets / Commissioner of Patents







Office de la Propriété Intellectuelle du Canada

Un organisme d'Industrie Canada Canadian Intellectual Property Office

An agency of industry Canada CA 2692016 C 2011/07/19

(11)(21) 2 692 016

(12) BREVET CANADIEN CANADIAN PATENT

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(22) Date de dépôt/Filing Date: 2010/02/05

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(45) Date de délivrance/Issue Date: 2011/07/19

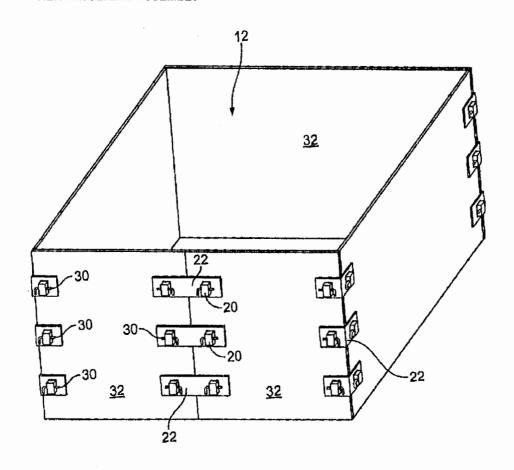
(51) Cl.Int./Int.Cl. *B65D 5/42* (2006.01), *B65D 5/44* (2006.01)

(72) Inventeur/Inventor: WIEBE, CLIFF, CA

(73) Propriétaire/Owner: OPEN RANGE ENERGY CORP., CA

(74) Agent: PERLEY-ROBERTSON, HILL & MCDOUGALL LLP

(54) Titre: ENSEMBLE DE FIXATION DE RECIPIENTS (54) Title: CONTAINER FASTENING ASSEMBLY



(57) Abrégé/Abstract:

A connection arrangement for connection of vertically and/or horizontally arranged containers. Each of the containers provides bosses or projections over a collinear pair of which is placed a separate plate. The plate provides matched polygonal apertures to





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(13) C

(57) Abrégé(suite)/Abstract(continued):
receive the projections. Each of the projections provides an aperture there through to receive a retainer pin or bolt, the pin or bolt abuts the plate when engaged. The arrangement greatly expedites the separation of the containers when desired. The user need only tap out the retainer pin and pull off the plate. This obviates the use of fasteners which can freeze, rust or become otherwise inoperative or cumbersome.

CONTAINER FASTENING ASSEMBLY

TECHNICAL FIELD

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The present invention relates to fasteners for modular containers/enclosures and more particularly, the present invention relate to a fastening assembly which is expeditiously removed and assembled to allow separation and assembly of the containers by the user without the need to unfasten bolts etc.

BACKGROUND OF THE INVENTION

Fastening assemblies of a broad variety have been used for some time in connecting modular containers and panels or segments making up the enclosures or containers. Contributory to the problem with the fastening arrangements known is that they are not designed for simplicity of use and with the least number of parts. It is well known that the nut and bolt or other mechanical arrangements are very often overly complex for the purpose of securing containers together. In the bolt system, the user is often faced with rusted connectors which are difficult if not impossible sometimes to disconnect. This often leads to complete destruction of the fastener and potential damage to the container which elevates costs for wasted time, materials and repairs.

As a further problem, the possibility of attempting to remove nuts from bolts etc. in inclement weather such as freezing weather becomes exceedingly difficult considering the clothing the user must wear to stay warm. The result is that the user often must at least remove hand protection to operate a wrench etc., thus introducing the possibility of frostbite or other exposure.

The prior art is replete with as many variations of fastening systems, all of which are not designed for user ease.

SUMMARY OF THE INVENTION

One object of the invention is to provide an improved fastening assembly for fastening adjacent containers.

A further object of one embodiment is to provide a connection assembly for connecting similar containers, comprising, in combination:

a first container and a second container in contact;

first cooperating engagement means projecting from each container of the containers, the first cooperating engagement means being in alignment on containers in contact;

second cooperating engagement means adapted for overlying releasable engagement with the first cooperating engagement means, the second cooperating means having a configuration matched in shape to the first cooperating engagement means, the first cooperating engagement means extending beyond the second cooperating engagement means when the second cooperating engagement means overlies the first cooperating engagement means;

10 third cooperating engagement means integral with the first cooperating engagement means; and

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fourth cooperating engagement means adapted for releasable engagement with the third cooperating engagement means and for retaining the second cooperating engagement means when overlying the first cooperating engagement means, whereby when the first cooperating engagement means receives the second cooperating engagement means and the third cooperating engagement means receives the fourth cooperating engagement means, each container is connected and secured against substantial vertical and horizontal separation.

The arrangement has been found to be particularly simple to use in any weather conditions. The first cooperating engagement means in one embodiment comprises a polygonal boss or projection extending outwardly from each adjacently positioned container.

The second cooperating engagement means comprises, in one embodiment, a plate adapted to overly the bosses. The plate is provided with apertures matched in configuration to the bosses. It is preferred that the shape of the bosses and the plate apertures be selected from a polygonal repertoire; circular arrangements do not provide any protection for horizontal and/or vertical movement between adjacent containers. The polygonal shape is advantageous to avoid such potentially hazardous and damaging movement. Further, the distance between the bosses of contacted containers is identical to a vertical distance between the bosses of an individual container.

The bosses are horizontally and vertically collinear to allow any plate to be used over any projections.

With respect to the fourth cooperating engagement means, the same may comprise in one possible embodiment, a pin or L bolt which is simply inserted in to the aperture extending through each boss.

The arrangement is particularly convenient, since a user wishing to disconnect connected containers, simply pushes out the pin from each boss and pulls the plate free of the bosses.

A further object of one embodiment of the present invention is to provide a connection assembly for connecting similar containers, comprising, in combination:

a first container and a second container in contact;

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a plurality of projections projecting from each container of the containers arranged in alignment on containers in contact;

a separate plate member adapted for overlying releasable engagement with the projections projecting from each container, the plate having apertures matched in shape to the projections, the projections extending beyond the plate when in overlying relation with the projections;

aperture means extending through the projections; and

retainer means adapted for releasable engagement with the aperture means, whereby when the projections receive the separate plate and the aperture means receives the retainer means, each container is connected and secured against substantial vertical and horizontal separation.

Yet another object of one embodiment of the present invention is to provide a modular container, comprising:

a plurality of separate container wall segments adapted for releasable connection with each other to form a container or enclosure;

25 first cooperating engagement means projecting from each container wall segment of the containers, the first cooperating engagement means being in alignment on each container wall segment;

second cooperating engagement means adapted for overlying releasable engagement with the first cooperating engagement means, the second cooperating

means having a configuration matched in shape to the first cooperating engagement means, the first cooperating engagement means extending beyond the second cooperating engagement means when the second cooperating engagement means overlies the first cooperating engagement means;

third cooperating engagement means integral with the first cooperating engagement means; and

fourth cooperating engagement means adapted for releasable engagement with the third cooperating engagement means and for retaining the second cooperating engagement means when overlying the first cooperating engagement means, whereby when the first cooperating engagement means receives the second cooperating engagement means and the third cooperating engagement means receives the fourth cooperating engagement means, each container wall segment is connected forming a container or enclosure and secured against substantial vertical and horizontal separation.

Advantageously, the use of the cooperating engagement means significantly reduces the time required to assemble and disassemble the enclosure or container and presents a marked benefit over existing arrangements.

BRIEF DESCRIPTION OF THE DRAWINGS

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Figure 1 is a perspective view of the container arrangement and fastening assembly according to one embodiment;

Figure 2 is an enlarged view of the assembly illustrated in Figure 1;

Figure 3 is an enlarged view of Figure 2;

Figure 4 is a section along line 4-4 of Figure 3;

Figures 5A through 5D illustrate alternate embodiments of Figure 3;

Figure 6 is an illustration of an alternate embodiment of the present invention; and

Figure 7 is an illustration of yet another alternate embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

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Referring now to Figure 1, shown is a perspective view of a first embodiment of the present invention. Numeral 10, generally refers to the arrangement. Large containers 12 for storage of, for example, water are desirably connected together for modulation at a site. The overall fastening assembly is referenced by numeral 14 and is more detailed in Figure 2.

Each container 12 is positioned for contact with an adjacent container 12 at an interface 16. A wall or extension 18 is provided on each container 12 for abutment with a similar component from the adjacent container 12. Each wall 18 includes a plurality of projecting bosses 20 extending outwardly in parallel planar relation from wall 18. The bosses 20 function as a first cooperating engagement. The bosses 20 may be welded to the walls 18. The bosses 20 on an individual container 12 are arranged in collinear equidistant relation and are horizontally aligned when walls 18 are abutted between containers 12. The horizontal distance between bosses 20 of adjacent containers, in this embodiment is the same and this is true of the spacing of bosses on an individual container 12.

With reference to Figure 3, shown is an enlarged view of the arrangement. The bosses 20, shown in the example as having a rectangular shape, receive, in overlying relation, a second releasable cooperating engagement member 22. The member 22 is shown in the example as a plate. The plate 22 has spaced apart apertures 24 which receive the bosses 20. The boss 20 shape and aperture 24 are configured for cooperation.

Plate 22 may comprise a similar material of which the containers 12 are made, such as steel. The plate 22 is dimensioned to overlie the interface of abutment, referenced by numeral 16, of the adjacent containers 12. The plate is also dimensioned to be of a lesser thickness than the height of the bosses 20. In this manner, the plate 22 can be loosely retained on the bosses 20 in a parallel plane to the walls 18.

In order to further assist in retaining the plate 22 on the bosses 20, a third releasably engageable cooperating means in the form of an aperture 28 (chain line) cooperates with a fourth releasably engageable cooperating means in the form of, for example, a pin or L-bolt 30. As is illustrated in the example, the pin 30 is received within the aperture

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28. The reception is such that the pin 30 abuts the surface of the plate 22. This relationship ensures that the plate 22 remains snugly against the walls 18. The former relationship is depicted in Figure 4.

The Figures illustrate the boss 20 shape as a rectangle. This is useful when combined with a keyed or matched configuration in the plate 22 to reduce if not eliminate any vertical or horizontal movement of connected containers. Any suitable polygonal shape is envisioned as a possibility. Figures 5A through 5D illustrate a number of variations for the plate 22 in terms of the apertures 24 being diamond, square, hexagonal and generally square in shape. The bosses 20 would obviously have a keyed shape for cooperation. In addition, Figures 5A through 5D show variations on the shape and disposition of the pins or L bolts 30. The pins or bolts may be inserted into the aperture 28 of the bosses 20 vertically, horizontally or angularly. Further, the pins may be of a varying dimension, i.e. conical, straight, or bent. As a further variation, the plate 22 may comprise any suitable shape variations of which are shown in Figures 5C and 5D with a generally dumbbell configuration. Other variations will be appreciated by those skilled.

Referring now to Figure 6, shown is another alternate embodiment of the present invention.

In this embodiment, two bosses 20, a pair from each container 12 are connected by a modified plate 22'. In this embodiment, two plates are joined by joining members 32, shown in the example to be vertical arms. Any suitable configuration to achieve this end is possible and will be appreciated by those skilled. Further, any number of bosses 20 may be connected.

Referring now to Figure 7, shown is a further variation of the present invention. In this embodiment, the container 12 is formed of a plurality of individual wall segments 32. Each segment includes the bosses 20 which cooperate with an adjacent segment 32 in a manner similar to that discussed with respect to the previous embodiments. Plate 22 joins the adjacent segments. Conveniently, the intersection of two segments at a corner can be easily accommodated by modifying plate 22 by a right angle bend as shown in the illustration. In situations where the angle required is acute or obtuse, the plate will be modified accordingly.

Although embodiments of the invention have been described above, it is not limited thereto and it will be apparent to those skilled in the art that numerous modifications form part of the present invention insofar as they do not depart from the spirit, nature and scope of the claimed and described invention.

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WE CLAIM:

1. A connection assembly for connecting similar containers, comprising, in combination:

a first container and a second container in contact;

boss means integral with and projecting outwardly from an extension wall of each said container of said containers, said boss means being in horizontal alignment on containers to be connected;

a second cooperating engagement member for overlying releasable engagement with at least a pair of said boss means of containers to be connected, said second cooperating engagement member being independent of each said container, said second cooperating member having a configuration matched in shape to said boss means, said boss means extending beyond said second cooperating engagement member when said second cooperating engagement member overlies said boss means, said second cooperating engagement member when engaged with said boss means overlies a contact interface of connected containers:

third cooperating engagement means integral with said boss means; and

fourth cooperating engagement means adapted for releasable engagement with said third cooperating engagement means and for retaining said second cooperating engagement member when overlying said boss means, connection between containers being effected solely when said boss means receives said second cooperating engagement member and said third cooperating engagement means receives said fourth cooperating engagement means, each said container is connected and secured against substantial vertical and horizontal separation.

- 2. The combination as set forth in claim 1, wherein said second cooperating engagement member is separate and unconnected to each said container.
- The combination as set forth in claim 1, wherein each container has a plurality
 of projecting boss means in vertical spaced relation.
- 4. The combination as set forth in claim 3, wherein said projecting boss means are in collinear arrangement.
- 5. The combination as set forth in claim 1, wherein said boss means of said first container and said second container are in a collinear arrangement.
- The combination as set forth in claim 2, wherein said second cooperating engagement member comprises a removable plate.
- 7. The combination as set forth in claim 1, wherein a horizontal distance between said boss means between contacted containers is identical to a vertical distance between said boss means of an individual container of said first container and said second container.
- 8. The combination as set forth in claim 1, wherein at least a boss means between adjacent containers is connected.
- 9. The combination as set forth in claim 1, wherein said third cooperating engagement means comprises an aperture extending through said boss means.
- 10. The combination as set forth in claim 1, wherein said fourth cooperating engagement means comprises a separate member unconnected to said container.
- 11. The combination as set forth in claim 10, wherein said fourth cooperating engagement means comprises an L-shaped pin releasably connectable within said third cooperating engagement means.
- 12. The combination as set forth in claim 1, wherein said fourth cooperating engagement means, when engaged with said third cooperating engagement means, abuts said second cooperating engagement member.

- 13. The combination as set forth in claim 1, wherein said first container and said second container are arranged in horizontal disposition.
- 14. The combination as set forth in claim 1, wherein said first container and said second container are arranged in vertical disposition.
- 15. The combination as set forth in claim 1, wherein said boss means and said second cooperating engagement member have matched polygonal shapes.
- 16. A connection assembly for connecting similar containers, comprising, in combination:
 - a first container and a second container in contact;
 - a plurality of projections projecting from the walls of each container of said containers arranged in alignment on containers in contact;
 - a separate plate member for overlying releasable engagement with said projections projecting from each container, said separate plate member being independent of each said container, said plate having apertures matched in shape to said projections, said projections extending beyond said plate when in overlying relation with said projections;

aperture means extending through said projections; and

retainer means adapted for releasable engagement with said aperture means, connection between containers being effected solely when said projections receive said separate plate and said aperture means receives said retainer means, each said container is connected and secured against substantial vertical and horizontal separation.

17. A modular container, comprising:

a plurality of separate container wall segments adapted for releasable connection with each other to form a container or enclosure;

boss means projecting from each said container wall segment of said containers, said boss means being in alignment on each container wall segment;

a second cooperating engagement plate for overlying releasable engagement with at least a pair of said boss means of each juxtaposed wall, said second cooperating engagement member being independent of said container wall segments, said second cooperating plate having a configuration matched in shape to said boss means, said boss means extending beyond said second cooperating engagement means when said second cooperating engagement plate overlies said boss means of juxtaposed walls;

third cooperating engagement means integral with said boss means; and fourth cooperating engagement means adapted for releasable engagement with said third cooperating engagement means and for retaining said second cooperating engagement member when overlying said first cooperating engagement means, formation of said container being effected solely by said boss means being received in said second cooperating engagement member and when said third cooperating engagement means is received in said fourth cooperating engagement means, whereby said container or enclosure is

18. The container as set forth in claim 17, wherein said plate is planar.

secured against substantial vertical and horizontal separation.

19. The container as set forth in claim 17, wherein said plate is angular.

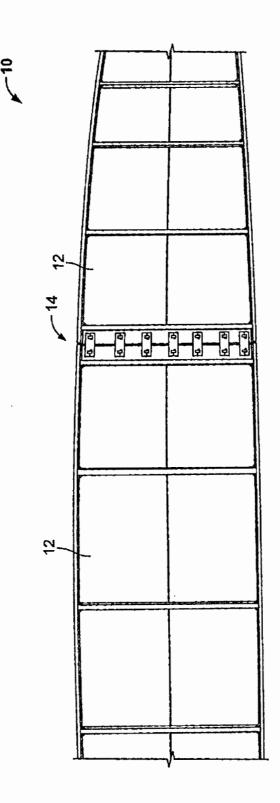


FIG. 1

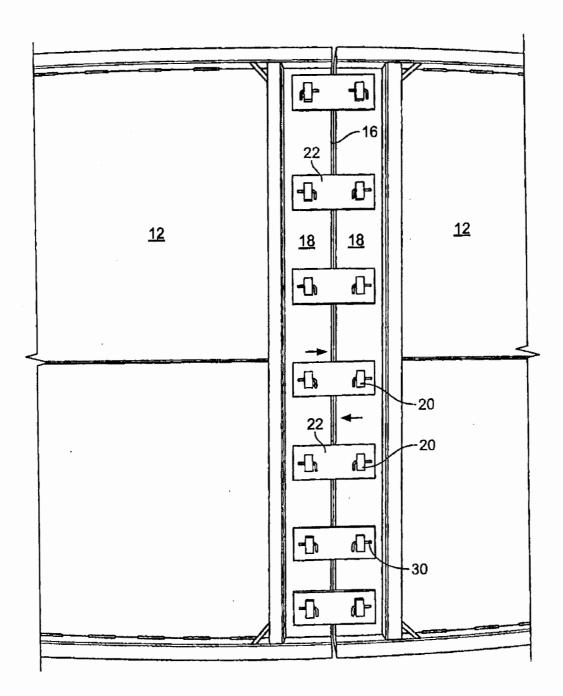
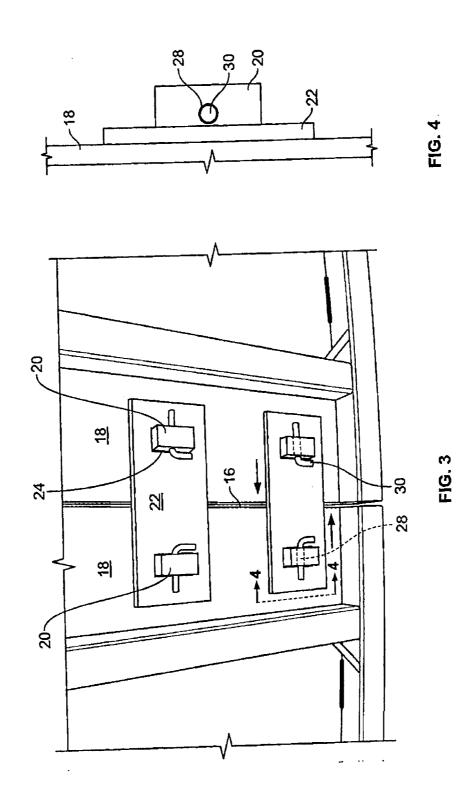
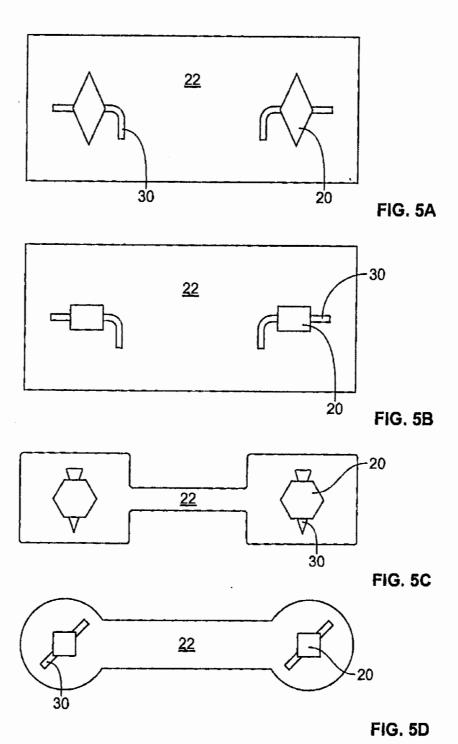
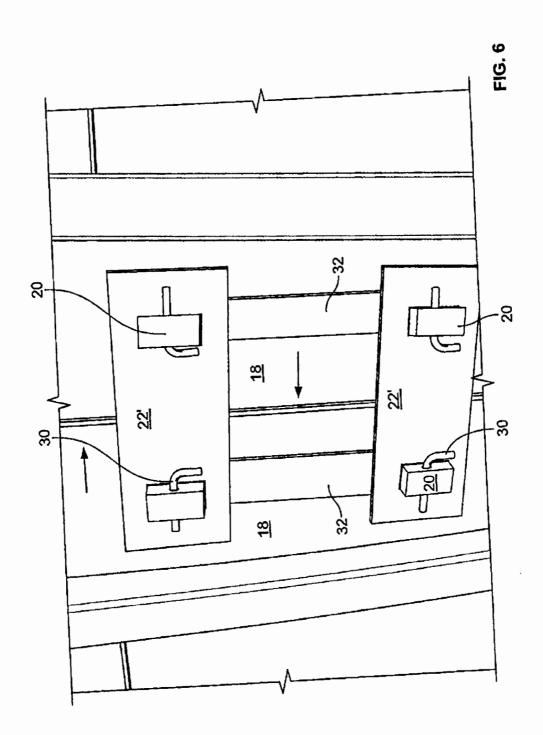


FIG. 2







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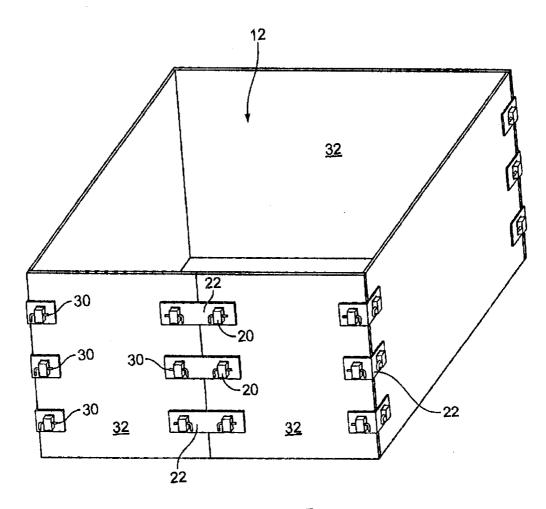


FIG. 7



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Data History Foreign Priority Published Address & Display Documents Attorney/Agent References Eees Supplemental Resources & Support Bibliographic Data Patent Information Application 12/985,362 Customer Number: -Number: Patent Guldance and General Info Codes, Rules & Manuals Filing or 371 (c) Docketed New Case -01-06-2011 Status: Employee & Office Directories Ready for Examination Date: Resources & Public Notices Application Type: Utility Status Date: 01-26-2012 **Patent Searches** Examiner Name: EDWARDS, BRETT J **ELECTRONIC** Location: Patent Official Gazette Group Art Unit: 3781 Location Date: Search Patents & Applications Confirmation Earliest Publication ∃ Search Biological Sequences US 2011-0194893 A1 4194 Number: No: Copies, Products & Services Earliest Publication 08-11-2011 Attorney Docket PCLP-003 Number: Date: Other Class / Subclass: 206/504 Patent Number: Copyrights <u>Trademarks</u> First Named Issue Date of Policy & Law Cliff WIEBE, Calgary, (CA) Inventor: Patent: Reports Title of Invention: CONTAINER FASTENING ASSEMBLY If you need help:

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August 26, 2011 Doc. 11341M1101

Poseidon Concepts Ltd. 1100, 645 - 7th Ave SW Calgary, Alberta T2P 4G8

Attention: To Whom It May Concern

Re: Atlantis, Poseidon & Triton Modular Tanks

This letter confirms that Beck Engineering (1992) Ltd. has designed and engineered the Poseidon Concepts modular tanks. Specifically, Beck Engineering has designed and reviewed the 6500m³ "Atlantis", the 2900m³ "Poseidon" and the 1440m³ "Triton" models.

Beck Engineering has structurally designed the tank wall panels and panel connections to fully withstand all forces and stresses that the modular tank may be subject to during transport, erection, filling and emptying the tank. Hydrostatic forces, considering a specific gravity of 1.05 have been considered during design of all components. Further, the modular tanks system has been designed to withstand the forces and stresses generated by potential out-of-plumb and out-of-round installation conditions.

The modular tanks have been designed in accordance with accepted engineering principles with reference to CSA S16 "Limit States Design of Steel Structures" as applicable. The total (von Mises) stress condition has also been considered for all components within the modular tank system including the panel connections. All stresses within the modular tank system components have been limited to ensure a minimum Factor of Safety of 3.0 has been maintained throughout the modular system. Beck Engineering has also provided signed and sealed erection procedures and ground preparation requirements.

The Poseidon, Atlantis and Triton modular tanks models are structurally designed to resist all anticipated forces on the tank panels and panel connections from the start of erection to the complete filling of the tank. The modular tank systems have been designed considering all hydrostatic forces, the associated tension developed in the wall panels and the tension forces and associated out-of-plane and out-of-plumb forces developed within the panel connections. Further consideration has been given to the forces and stresses introduced during erection considering lifting and handling and wind forces during assembly.

Beck Engineering has provided Poseidon Concepts (via Open Range Energy Corp.) with signed and sealed drawings showing all required connection details and material specifications as necessary for fabrication of the 3 modular tank models described herein.

I trust this is the information you currently require. Beck Engineering would be pleased to provide further information as necessary within the limits of our confidentiality obligations to Poseidon Concepts.

Regards,

Beck Engineering (1992) Ltd APEGGA Permit No. 2042

Michael Hayden, P.E.



Western Industries Inc.

PO Box 428 Yellowstone Hill Miles City, Montana 59301 (406) 234-1680 (406) 234-7774 Fax (800) 488-3592

8, 10 & 12 oz. Nonwoven Geotextile

				\$	
	121116	Parking that are the		10.00	
	dillicups	and home and a second	A.C	2.400	
Property				ASTM	
Weight	8 oz/yd²	10 oz/yd²	12 oz/yd²		
Grab Tensile	205 lbs	250 lbs	300 lbs	D-4632	
Grab Elongation	50%	50%	50%	D-4632	
Trapezoidal Tear	80 lbs	100 lbs	115 lbs	D4533	
Tear	00 IUS	100 lbs	113 lbs	D4333	
Puncture					
Resistance	525 lbs	625 lbs	825 lbs	D-6241	
UV Resistance	70% Strength	70% Strength	70% Strength	D 4255	
After 500 hrs.	Retained	Retained	Retained	D-4355	
Hydraulic					
Apparent		100 HG 641	100 HG Gt 1		
Opening Size	80 US Std. Sieve	100 US Std. Sieve	100 US Std. Sieve	D-4751	
(AOS) ³	60 03 Std. Sleve	Sieve	Sieve	D-4/31	
Permittivity	1.5 sec ⁻¹	1.2 sec ⁻¹	1.0 sec ⁻¹	D-4491	
Water Flow					
Rate	110 gpm/ft ²	85 gpm/ft ²	75 gpm/ft ²	D-4491	

These values are typical data and are not intended as limiting specifications.

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910 1200. Standard must be consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration (Non-Mandatory Form)
Form Approved



IDENTITY (as Used on Label and List)
GSE Low Density Polyethylene Geomembrane (LLDPE)

OMB No. 1218-0072

Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

		e markea to ina	cate triat.	
Section 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICA		anhana Niimhar 4 90	0.425.2009	CHEMTREC (800) 424-9300
Manufacturer's name GSE Lining Technology		ephone Number 1-80		CHEMTREC (800) 424-9300
Address (Number, Street, City, State and ZIP Code)	Telephone Num	ber for Information 1	-800-435-2008	
19103 Gundle Rd	Date Prepared	1/1/1999		
Houston, Texas 77073	Signature of Pro	eparer (optional)		· · · · · · · · · · · · · · · · · · ·
Section2 Hazardous Ingredients/Identity Information				
Hazardous Components (Specific Chemical Identity, Common Name(s))			Other Limits	
	OSHA PEL	ACGIH TLV	Recornmended	% (optional)
PRODUCT NAME: LLDPE (ALL GRADES)	None	None	None	
CHEMICAL NAME:				
Polyethylene or Ethylene-Olefin Copolymer				
CHEMICAL FAMILY:		·····		
Ethylene-Based Polymer				
PRODUCT DESCRIPTION:				
Odorless opaque white pellets or granules.				
				···
This product is not haz	ardous as d	efined in 29	CFR1910.120	0
Section 3 COMPOSITION/INFORMATION ON INGREDIENTS				
POTENTIAL HEALTH EFFECTS EYE CONTACT: P	articulates	mav scratch	eve surface	s/cause mechanical
irritation.			·	
SKIN CONTACT:				
Negligible hazard at ambient temperatures (-18 to +38	degrees C; 0	to 100	
degrees F).				
Exposure to hot material may cause thermal	burns.			
INHALATION:				
Negligible hazard at ambient temperature (-				
Vapors and/or aerosols which may be formed	at elevated	temperature	s may	
be irritating to eyes and respiratory tract	•			
INGESTION:				
Minimal toxicity.				
Section 4 FIRST AID MEASURES				
EYE CONTACT:				
This product is an inert solid. If in eye,	remove as o	ne would any	foreign obj	ect.
SKIN CONTACT:				
For hot product, immediately immerse in				
of cold water to dissipate heat. Cover	with clear	cotton she	eeting or ga	auze and get
prompt medical attention. No attempt sh	nould be ma	de to remov	ve material	from skin or to
remove contaminated clothing, as the da	amaged fles	sh can be ea	asily torn.	
INHALATION:				
In case of adverse exposure to vapors a	and/or aero	sols formed	d at elevate	ed temperatures,
immediately remove the affected victim				
respiration if breathing is stopped. Ke				
INGESTION:	- CP 4C 1CBC	0011 101	Prompt med.	TOUT GCCOHOLOH
First aid is normally not required.				
ritse and is normally not required.			Latin	

Liner

Product Description

The Liner geomembranes are economical lining materials made from blended/reprocessed resins selected for optimum performance at the lowest cost. Products are intended for use in gomembrane applications such as oil and gas reserve pits, temporary containment of frac water, backflow water high in salt concentration, seepage control, water containment and short-term protective covers. Prefabricated liners are also ideal for installation by contractors, owners, or agricultural operators.

Technical Data

Materials information is below.

Installation

Liner is flexible enough to be prefabricated at our facility into large panels (Up to 27,000 square feet at 30 mil). The prefabricated panel is accordion folded, rolled on a core, and delivered to the job site secured to a pallet. Prefabricated panels can often cover a small project with a single panel. Local labor forces are used to unroll and unfold the panels. Our entire primary field welding of liner is based on hot wedge welding technology. Field wedge welding Liner provides strong seams, and fast installations on large projects. Small welds and repairs can be completed with the Layfield Enviro Liner® welding kit.

9. Material Properties

19 Nov 2011	Series Typical Properties				
Style	ASTM	20 mil	30 mil	40 mil	
Thickness (Nominal)	D5199	20 mil 0.50 mm	30 mil 0.75 mm	40 mil 1.0 mm	
Tensile Strength at Break	D638	75 ppi 13.8 N/mm	114 ppi 21 N/mm	154 ppi 28.5 N/mm	
Elongation	D638	800%	800%	800%	
Tear Resistance	D1004	11 lbs 49 N	16 lbs 71 N	22 lbs 98 N	
Puncture Resistance	D4833	30 lbs 130 N	45 lbs 200 N	60 lbs 270	
Low Temperature Impact Resistance	D1790	-40°F -40°C	-40°F -40°C	-40°F -40°C	
Dimensional Stability	D1204 Max Chng	<2.0%	<2.0%	<2.0%	

10. Shop Seam Strengths

19 Nov 2011	Shop Seam Strengths			
Style	ASTM	20 mil	30 mil	40 mil
Heat Bonded Seam Strength	D6392 25.4 mm (1") Strip	25 ppi 4.4 N/mm	36 ppi 6.3 N/mm	48 ppi 8.4 N/mm
Heat Bonded Peel Adhesion Strength	D6392 25.4 mm (1") Strip	FTB 18 ppi 3.2 N/mm	FTB 29 ppi 5.1 N/mm	FTB 39 ppi 6.8 N/mm



GSE 30 mil UltraFlex Smooth Geomembrane (Nominal)

GSE 30 mil UltraFlex is a smooth linear low density polyethylene (LLDPE) geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased flexibility and elongation properties where differential or localized subgrade settlements may occur such as in a landfill closure application.

Product Specifications

TESTED PROPERTY	TEST METHOD.	FREQUENCY	NOMINAL VALUE
Thickness, (Nominal) mil (mm) with a tolerance +/- 10%	ASTM D 5199	every roll	27 (0.68)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.92
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Elongation at Break, %	ASTM D 6693, Type IV Dumbell, 2 ipm G.L. 2.0 in (51 mm)	20,000 lb	114 (20) 800
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	16 (70)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	42 (190)
Carbon Black Content ⁽¹⁾ , % (Range)	ASTM D 1603*/4218	20,000 16	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note ⁽¹⁾
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>140
Constitution of the Consti	TYPICAL ROLL	DIMENSIONS	
Roll Length ⁽²⁾ , ft (m)			1,120 (341)
Roll Width ⁽²⁾ , ft (m)	THE RESERVE OF THE PROPERTY OF		22.5 (6.9)
Roll Area, ft² (m²)			25,200 (2,341)

NOTES:

- inDispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- (2)Roll lengths and widths have a tolerance of \$1%.
- GSE UltraFlex is available in rolls weighing approximately 3,900 lb (1,769 kg).
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77° C when tested according to ASTM D 745.
- *Modified

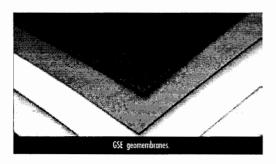
OTDSUF R02/15/10

gseworld.com



The Pioneer Of Geosynthetics

Chemical Resistance for Geomembrane Products



GSE geomembranes are made of high quality, virgin polyethylene which demonstrates excellent chemical resistance. GSE polyethylene geomembranes are resistant to a great number and combinations of chemicals. It is this property of (HDPE) high density polyethylene geomembranes that makes it the lining material of choice.

In order to gauge the durability of a material in contact with a chemical mixture, testing is required in which the material is exposed to the chemical environment in question. Chemical resistance testing is a very large and complex topic because of two factors. First, the number of specific media is virtually endless and second, there are many criteria such as tensile strength, hardness, etc. that may be used to assess a material's resistance to degradation.

The chemical resistance of polyethylene has been investigated by many people over the past few decades. We are able to draw from that work when making statements about the chemical resistance of today's polyethylene geomembranes. In addition to that, many tests have been performed that specifically use geomembranes and certain chemical mixtures. Naturally, however, every mixture of chemicals cannot be tested for. As a result of these factors, GSE published a chemical resistance chart, demonstrating general guidelines.

Polyethylene is, for practical purposes, considered impermeable. Be aware, however, that all materials are permeable to some extent. Permeability varies with concentration, temperature, pressure and type of permeant. The rates of permeation are usually so low, however, that they are insignificant. As a point of reference, polyethylene is commonly used for packaging of several types of materials. These include gaso-

line, motor oil, household cleaners (i.e. bleach), muratic acid, pesticides, insecticides, fungicides, and other highly concentrated chemicals. Also, you should be aware that there are some chemicals which may be absorbed by the material but only when present at very high concentrations. These include halogenated and/or aromatic hydrocarbons at greater than 50%; their absorption results in swelling and slight changes in physical properties such as increased tensile elongations. This includes many types of fuels and oils. Recognize that this action, however, does not affect the liner's ability to act as a barrier for the material it is containing.

Since polyethylene is a petroleum product, it can absorb other petroleum products. Like a sponge, the material becomes slightly thicker and more flexible but does not produce a hole or void. However, unlike a sponge, this absorption is not immediate. It takes a much longer time for a polyethylene liner to swell than it does for a sponge. The exact time it takes for swelling to occur depends on the particular constituents and concentrations of the contained media. However, a hole would not be produced. Also, this absorption is reversible and the material will essentially return to it's original state when the chemical is no longer in contact with the liner.

With regard to typical municipal landfills in the United States, legally allowable levels of chemicals have been demonstrated to have no adverse affect on polyethylene geomembrane performance. The very low levels of salts, metals and organic compounds do not damage polyethylene. A double-lined containment with a leachate (leak detection) removal system effectively prevents any significant, continuous exposure of the secondary membrane to these materials and for practical purposes makes the total liner system even more impermeable.



The Pioneer Of Geosynthetics

Chemical Resistance Chart

GSE is the world's leading supplier of high quality, polyethylene geomembranes. GSE polyethylene geomembranes are resistant to a great number and combinations of chemicals. Note that the effect of chemicals on any material is influenced by a number of variable factors such as temperature, concentration, exposed area and duration. Many tests have been performed that use geomembranes and certain specific chemical mixtures. Naturally, however, every mixture of chemicals cannot be tested for, and various criteria may be used to judge performance. Reported performance ratings may not apply to all applications of a given material in the same chemical. Therefore, these ratings are offered as a guide only.

Resistance at:					. 11.11	
Medium C	oncentration	20° C (68° F)	60° C (140° F)	Medium	Concentratio	n
THE STATE OF THE S				Copper chloride	ant col	
etic acid	100%	Ś	L		sat. sol.	
etic acid	10%	Š	Š	Copper nitrate	sat. sol.	
etic acid anhydride	100%	Š	L	Copper sulfate	sat. sol.	
				Cresylic acid	sat, sol.	
etone	100%	L	L	Cyclohexanol	100%	
lipic acid	sat, sol.	S	S	Cyclohexanone	100%	
llyl alcohol	96%	S	S	[
luminum chloride	sat. sol.	S	S S	Decahydronaphthalene	100%	
luminum fluoride	sat. sol.	S	S	Dextrine	sol.	
luminum sulfate	sat. sol.	S	S	Diethyl ether	100%	
lum	sol.	Š	Š	Dioctylphthalate	100%	
mmonia, aqueous	dil. sol.	S	S			
mmonia, gaseous dry	100%	8	3	Dioxane	100%	
		S S	S S S	<u> </u>		
nmonia, liquid	100%	5	8	Ethanediol	100%	
mmonium chloride	sat. sol.	S	S	Ethanol	40%	
mmonium fluoride	sol.	S	S	Ethyl acetate	100%	
mmonium nitrate	sat. sol.	S	S	Ethylene trichloride	100%	
mmonium sulfate	sat. sol.	S	S	F		
mmonium sulfide	sol.	S	S S	Ferric chloride	sat. sol.	
nvl acetate	100%	S S	Ĺ	Ferric nitrate	sol.	
myl alcohol	100%	Š	Ĺ	Ferric sulfate		
niline	100%	S S	Ĺ	Ferrous chloride	sat. sol.	
ntimony trichloride	90%	Š	S		sat. sol.	
rsenic acid		S	S	Ferrous sulfate	sat. sol.	
	sat. sol.			Fluorine, gaseous	100%	
qua regia	HCI-HNO3	U	U	Fluorosilicie acid	40%	
			_	Formaldehyde	40%	
arium carbonate	sat. sol.	S	S	Formic acid	50%	
arium chloride	sat. sol.	S	S	Formic acid	98-100%	
arium hydroxide	sat. sol.	S	S	Furfuryl alcohol	100%	
arium sulfate	sat. sol.	S	S	II G		
arium sulfide	sol.	S S	S	Gasoline		
enzaldehyde	100%	S	Ĺ	Glacial acetic acid	96%	
enzene		Ľ	Ĺ	Glucose	sat. sol.	
enzoic acid	sat, sol.					
eer	5dt. 501.	S S S	S S S	Glycerine	100%	
orax (sodium tetraborate)	ant anl	3	5	Glycol	sol.	
	sat. sol.		S	H		
oric acid	sat. sol.	S	S	Heptane	100%	
romine, gaseous dry	100%	U	U	Hydrobromic acid	50%	
romine, liquid	100%	U	U	Hydrobromic acid	100%	
utane, gaseous	100%	S	S	Hydrochloric acid	10%	
Butanol	100%	S	S	Hydrochloric acid	35%	
utyric acid	100%	S	L	Hydrocyanic acid	10%	
				Hydrofluoric acid	4%	
alcium carbonate	sat. sol.	S	S	Hydrofluoric acid	60%	
alcium chlorate	sat, sol.	Š	S	Hydrogen	100%	
aleium chloride	sat. sol.	š	Š			
alcium nitrate		S	3	Hydrogen peroxide	30%	
	sat. sol.	5	S S	Hydrogen peroxide	90%	
alcium sulfate	sat. sol.	S	S	Hydrogen sulfide, gaseou	s 100%	
alcium sulfide	dil. sol.	L	L			
arbon dioxide, gaseous dry	100%	S	S	Lactic acid	100%	
arbon disulfide	100%	L	Ü	Lead acetate	sat. sol.	
arbon monoxide	100%	Š	Š	M Ecad acciate	341, 801,	
hloracetic acid	sol.	Š	Š		ant and	
arbon tetrachloride	100%	L	Ü	Magnesium carbonate	sat. sol.	
				Magnesium chloride	sat. sol.	
nlorine, aqueous solution	sat. sol.	ŗ	U	Magnesium hydroxide	sat. sol.	
hlorine, gaseous dry	100%	L	U	Magnesium nitrate	sat. sol.	
hloroform	100%	U	U	Maleic acid	sat. sol.	
hromic acid	20%	S	L	Mercuric chloride	sat. sol.	
hromic acid	50%	S	L	Mercuric cyanide	sat. sol.	

			Resistance at:		
Medium	Concentration	20° C	60° C		
	33.7	(68° F)	(140° F		
Silver acetate	sat. sol.	S	S		
Silver cyanide	sat. sol.	S	S		
Silver nitrate	sat. sol.	S	S		
Sodium benzoate	sat. sol.	S	S		
Sodium bicarbonate	sat. sol.	S	S		
Sodium biphosphate	sat. sol.	S	S		
Sodium bisulfite	sol.	S	S		
Sodium bromide	sat. sol.	S	S		
Sodium carbonate	sat. sol.	S	S		
Sodium chlorate	sat. sol.	S	S		
Sodium chloride	sat. sol.	S	S		
Sodium cyanide	sat. sol.	S	S		
Sodium ferricyanide	sat. sol.	S	S		
Sodium ferrocyanide	sat. sol.	S	S		
Sodium fluoride	sat. sol.	S	S		
Sodium hydroxide	40%	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	8888888888888888888888888		
Sodium hydroxide	sat. sol.	S	S		
Sodium hypochlorite	15% active chl	orine S	S		
Sodium nitrate	sat. sol.	S	S		
Sodium nitrite	sat. sol.	S	S		
Sodium orthophosphate	sat. sol.	S	S		
Sodium sulfate	sat. sol.	S	S		
Sodium sulfide	sat, sol.	S	S		
Sulfur dioxide, dry	100%	S	S		
Sulfur trioxide	100%	U	U		
Sulfuric acid	10%	S	S		
Sulfuric acid	50%	S	S		
Sulfuric acid	98%	S	U		
Sulfuric acid	fuming	U	U		
Sulfurous acid	30%	S	S		
Т					
Tannic acid	sol.	S	S		
Tartaric acid	sol.	Š	S		
Thionyl chloride	100%	L	U		
Toluene	100%	L	U		
Triethylamine	sol.	S	L		
U					
Urea	sol.	S	S		
Urine	ALUKU 1986	S	S		
W					
Water		S S S	S		
Winc vinegar		S	S		
Wines and liquors		S	S		
X					
Xylenes	100%	L	U		
Y					
Yeast	sol.	S	S		
Z					
Zinc carbonate	sat. sol.	S	S		
Zinc chloride	sat, sol.	S	S		
Zinc (II) chloride	sat. sol.	S	S		
Zinc (II) cinoriae	sat, sol.	S	S		
Zinc (IV) chloride			0		
Zinc (IV) chloride Zinc oxide	sat. sol.	S	S		
Zinc (IV) chloride	sat. sol. sat. sol.	S S S S S	\$ \$ \$ \$ \$ \$		

NOTES:

- (S) Satisfactory: Liner material is resistant to the given reagent at the given concentration and temperature. No mechanical or chemical degradation is observed.
- (L) Limited Application Possible: Liner material may reflect some attack. Factors such as concentration, pressure and temperature directly affect liner performance against the given media. Application, however, is possible under less severe conditions, e.g. lower concentration, secondary containment, additional liner protections, etc.
- (U) Unsatisfactory: Liner material is not resistant to the given reagent at the given concentration and temperature. Mechanical and/or chemical degradation is observed.
- (-) Not tested
- sat. sol. = Saturated aqueous solution, prepared at 20°C (68°F)
- sol. = aqueous solution with concentration above 10% but below saturation level
- dil. sol. = diluted aqueous solution with concentration below 10%
- cust. conc. = customary service concentration

This information is provided for reference purposes only and is not intended as a warranty or guarantee. GSE assumes no liability in connection with the use of this information.

Appendix SSI-3

> Atlantis system set-up procedures

Steps for setting a tank Prejob checklist Get site info Company rep name Check site for level and ground material make-up Where are tank and accessories coming from, who is shipping? Inventory needed on site day of tank install Geo Liner Tank walls Piping (and all bolts, washers, nuts required) Ladders w/ fall arrestors Plate stands with plates, pins and safety pins Clamps Tools needed Trackhoe with operator Boom truck or crane capable of reaching 7000 lbs at least 50 feet with operator **On sites where acceptable – a 12,000 lb. telehandler with proper jig may be substituted for the crane/boom truck, (manbasket also recommended) Genie boom - min. 30 foot reach Laser level – for checking ground work prior to tank setup Wrenches for tightening plumbing Impact wrench for tightening clamps more quickly Wrecking bar for prying/moving plates Crowfoot bar for prying plates inserting pins Heavy duty liner bar at least 80 gauge probably 120 gauge steel pipe Marking paint and dispenser 300' tape measure

Set of four 20 foot long, min. 8,000 lb. capacity two straps for pulling out liner.

Poseidon Concepts

Tank setting Procedures

Use proper safety procedures for all steps. Hoisted loads must have tag lines, genie operators will be harnessed properly and anchored, and all required PPE will be worn at all times.

- Check pad for rocks, sharp objects, irregularities, proper suction pits.
 - Suction pits should be deeper in the center than toward the edge of the tank. This will prevent air from being trapped and the suction box floating.
 - O Y-trenches should be no less than 8" and nor more than 18" deep.
- Unroll geo-fabric (rough/rocky pad may require two layers of geo)
 - Overlap at least 1 foot unless using a one-piece fabricated geo
 Start on the downwind side when using single rolls
 - Paint circle for tank walls on top of the geo

Setting liner

- o Paint stop lines to indicate how far to pull liner.
- Set picker to boom out so you can unroll the liner with the trackhoe
- Use laborers to unfold liner to the stop lines.
- Square the liner up, if needed.
- o Repeat procedure, if double lined.
- o Fold liner back to center to allow room to place tank walls
- Paint a circle as a top-of-wall guide for pulling liner, trim outside that line so it will hang at least two feet outside of the tank.
- o At this point it is very helpful to fill your y-trenches to weight down the liner.

Placing tank walls (with crane)

- If using a crane or boom truck, position to start placing tank panels
- o Back truck with panels within reach of the crane or pack with the trackhoe.
- With a 4-point hook, lift panel, swing into place.
- Picker will set panel on ground and reposition hooks to a four-point lift using the slide arms on the panels to stand upright and position it on the circle painted on the geo.
- If using a telehandler, hook up to the four inside angled pick points. Then pick and carry to desired starting point. You will need to measure and paint a center reference to make setting panels easier for the telehandler operator.
- Trackhoe will need to use thumb to "hold" panel in place until the next panel is attached.
- Repeat steps with next panel, connect with plates, pins and safety pins. Trackhoe may release panel at this point unless high wind conditions exist, then should hold for at least three panels.
- After connecting each panel, a 3 foot wide length of geo will be placed and secured to protect the liner from the seams of the tank.
- Continue these steps until tank walls are all in place. Do not connect the last panel until liner-pulling crew has entered the tank, do not make the connections on the last seam until ladders are in place and liner pull is nearing completion.
- Connect final panel.

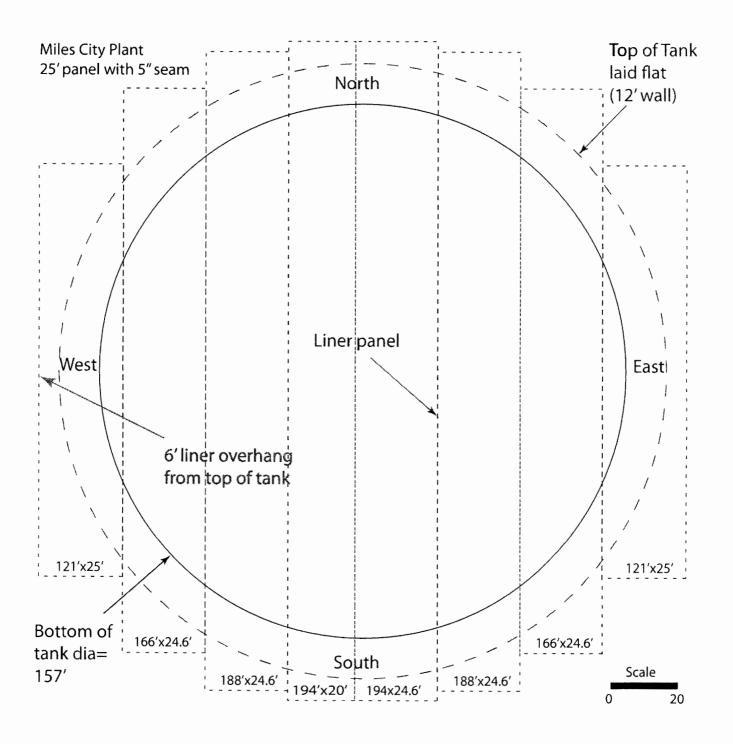
Pulling liner

Worker inside the tank straps liner, and hands to genie workers. Genie workers pull the liner so that the
pull line is at the top of the wall. Worker inside tank will make sure the liner is to the wall of the tank

- along the floor. Clamp the liner in place. (It is helpful in windy situations to be filling the tank as you are pulling liner to add weight and keep the wind from blowing it out.)
- o Continue procedure until the entire liner has been pulled over the wall and secured in place.
- Clamps should be spaced and an adequate number put on the wall to minimize wind inside the tank behind the liner.
- After liner is pulled and clamped, trim excess liner 2-3 feet outside of the tank. Trackhoe should clean
 up and prevent dispersion by covering with dirt, snow, etc.
- > Assemble suction, piping and ladders and place over wall
 - Make sure all bolts, connections and clamps are securely fastened. Flexible suction needs to have TWO clamps on each end.
 - Place filler tubes and circulating pipes around tank as needed.
 - o Leave all valves open to allow air to escape.
 - Make sure sure fall arrestors are in place and functional.
- Walk outside of tank, make sure all plates are in place, pins properly secured with safety pins in place.
- Check area for garbage, debris, tools, etc..

Appendix SSI-4

Design diagram for liner seam orientation



Appendix SSI-5

> Reclamation section for BLM APD

ECIAL DRILLING STIPULATION

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

() Other

OPERATOR'S NAME STRATA PRODUCTION COMPANY WELL NO. & NAME #29 NASH UNIT LOCATION 1980' F S L & 2310' F E L SEC. 13 , T. 23S., R. 29E . LEASE NO. NM-17589 COUNTY EDDY STATE NEW MEXICO
The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.
This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.
I. SPECIAL ENVIRONMENT REQUIREMENTS
() Lesser Prairie Chicken (Stips attached) () Floodplain (Stips attached) () Other
II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING
() The BLM will monitor construction of this drill site. Notify the () Carlsbad Resource Area Office at (505) 887-6544 () Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.
(N Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.
() All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately inches in depth. Approximately cubic yards of topsoil material will be stockpiled for reclamation.
() Other
III. WELL COMPLETION REQUIREMENTS
() A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.
Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and reseeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.
() A. Seed Mixture 1 (Loamy Site) Lehmanns Lovegrass (Eragrostis lehmannlana) 1.0 Side Oats Grass (Soutelous curtipendula) 5.0 Sand Dropseed (Sporobolus cryptandrus) 1.0 Sand Dropseed (Sporobolus cryptandrus) 1.0 Plains Bristlegrass (Setaria magrostachya) 2.0
() C. Seed Mixture J (Shallow Sites) Sideoats Grama (Boute curtipendula) 1.0 Lehmanns Lovegraes (Eragrostis lenmanniana) 1.0 or Boar Lovegraes (E. chloromalas) (i) D. Seed Mixture 4 ("Gyp" Sites) Alkali Sacaton (Sporobolus airoides) 1.0 Four-Wing Saltbush (Atriplex canescens) 5.0
Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

C. The reserve pit will be lined with a high quality plastic sheeting (5-7 mil thickness).

10. Plan for Restoration of the Surface:

A. Upon completion of the proposed operations, should the well be abandoned, the pit area, after allowed to dry, will be broken out and leveled. The original top soil will be returned to the entire location, and leveled and contoured to the original topography as nearly as possible.

All trash, garbage and pit lining will be removed in order to leave the location in an aesthetically pleasing condition. All pits will be filled and the location leveled within 120 days after abandonment.

- B. The disturbed area will be revegetated by reseeding during the proper growing season with a seed mixture of native grasses as recommended by the BLM.
- C. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time the rig is removed, the reserve pit will be fenced on the rig (fourth) side to prevent livestock or wildlife from being entrapped. The fencing will remain in place until the pit area is cleaned and leveled. No oil will be left on the surface of the fluid in the pit.
- D. Upon completion of the proposed operations, should the well be productive, the reserve pit area will be treated as outlined above within the same prescribed time. The caliche from an area of the original drillsite not needed for production operations or facilities will be removed and used for construction of thicker pads or firewalls for the tank battery installation. Any additional caliche required for facilities will be obtained from a BLM approved caliche pit. Topsoil removed from the drillsite will be used to recontour the pit area and unused portions of the drill pad to the original natural level and reseeded as per BLM specifications.

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

June 13, 2012

Mr. Mike Bratcher NMOCD District 2 811 South First Street Artesia, New Mexico 88210 Via E-mail Mr. Brad Jones NMOCD 1220 S. St. Francis Drive Santa Fe, NM

RE: Nash Draw Unit #29 modular impoundment (Atlantis system) for temporary storage of treated produced water.

Dear Mike and Brad:

For the above-referenced modular impoundment, we are pleased to submit:

- 1. A C-144 Form
- 2. Supplemental information to support the C-144

Please contact me with any questions or comments at 505-266-5004

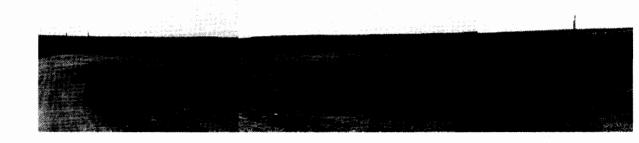
Sincerely,

R.T. Hicks Consultants

Andrew Parker

Copy: David Luna, XTO Energy

C-144 Permit Package for Nash Draw Unit #29 -Temporary Storage of Treated Produced Water - Modular Impoundment Section 13 T23S R29E Eddy County NM



Prepared for XTO Energy Midland, Texas

Prepared by R.T. Hicks Consultants, Ltd. Albuquerque, New Mexico

C-144

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Form C-144 Revised August 1, 2011

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

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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application						
Type of action: X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method						
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request						
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.						
Operator: XTO Energy, Inc OGRID #: 5380						
Address: 200 N. Loraine, Suite 800 Midland, TX 79701						
Facility or well name: Nash Unit #29						
API Number: 30-015-29434 OCD Permit Number:						
U/L or Qtr/Qtr J Section 13 Township 23S Range 29E County: Eddy						
Center of Proposed Design: Latitude N 32.30322 Longitude W 103.93719 NAD: ☐ 1927 🗵 1983						
Surface Owner: X Federal State Tribal Trust or Indian Allotment						
Z Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: Drilling Workover Drilling Workover Permanent Emergency Cavitation P&A X Other: Modular impoundment for temporary storage of treated produced water Vertical steel foam-insulated panels Lined Unlined Liner type: Thickness 30 mil LLDPE HDPE PVC Other that support liner Diameter: 157 ft. Height: 12 ft Liner Seams: Welded Factory Other Other Volume: 41,000 bbl Dimensions: Welded Diameter: 157 ft. Height: 12 ft PVC Diameter: 157 ft. Height: 12 ft Diameter: 157 ft. Height: 12 ft PVC DIAMETER: PVC DIAM						
Closed-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) Drying Pad Above Ground Steel Tanks Haul-off Bins Other Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Other Liner Seams: Welded Factory Other						
Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume:						

Alternative Method:

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

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remporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number: or Permit Number:
12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC
and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
☐ Previously Approved Operating and Maintenance Plan API Number: (Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
S
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Climatological Factors Assessment Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Preeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan. Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System Alternative Modular impoundment for temporary storage of treated produced water Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached. Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings) Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Instructions: Please indentify the facility or facilities for the disposal of liquids, drill facilities are required.		
•	posal Facility Permit Number:	
	posal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities occur Yes (If yes, please provide the information below) No		
Required for impacted areas which will not be used for future service and operations: Soil Backfill and Cover Design Specifications based upon the appropriate req Re-vegetation Plan - based upon the appropriate requirements of Subsection 1 of Site Reclamation Plan - based upon the appropriate requirements of Subsection 6	19.15.17.13 NMAC	2
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the clos provided below. Requests regarding changes to certain siting criteria may require an considered an exception which must be submitted to the Santa Fe Environmental Bu demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for g	lministrative approval from the appropriate disti reau office for consideration of approval. Justi	rict office or may be
Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data ob	tained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data ob	tained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data ob	tained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significal lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	cant watercourse or lakebed, sinkhole, or playa	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in each visual inspection (certification) of the proposed site; Aerial photo; Satellite image		☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less that watering purposes, or within 1000 horizontal feet of any other fresh water well or sprin - NM Office of the State Engineer - iWATERS database; Visual inspection (cert	g, in existence at the time of initial application.	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water we adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval of	_	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual in	spection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and	d Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Society; Topographic map	Mineral Resources; USGS; NM Geological	☐ Yes ☐ No
Within a 100-year floodplain FEMA map		☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the forby a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Sub Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) Protocols and Procedures - based upon the appropriate requirements of 19.15.17 Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Sub Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill Soil Cover Design - based upon the appropriate requirements of Subsection H of Re-vegetation Plan - based upon the appropriate requirements of Subsection I of Site Reclamation Plan - based upon the appropriate requirements of Subsection I of	ments of 19.15.17.10 NMAC posection F of 19.15.17.13 NMAC priate requirements of 19.15.17.11 NMAC - based upon the appropriate requirements of 19. 13 NMAC ments of Subsection F of 19.15.17.13 NMAC posection F of 19.15.17.13 NMAC cuttings or in case on-site closure standards cann f 19.15.17.13 NMAC 19.15.17.13 NMAC	15.17.11 NMAC

Form C-144 Oil Conservation Division Page 4 of 5

Operator Application Certification:					
I hereby certify that the information submitted with this application is true, accurate and	complete to the best of my knowledge and belief.				
Name (Print): David Luna	Title: Operations Engineer				
0 1					
Signature: Dovel Survey	Date: 06/13/2012				
e-mail address: David_Luna@xtoenergy.com	Telephone: 432-620-6742				
20. OCD Approval: Permit Application (including closure plan) Closure Plan (only	y) OCD Conditions (see attachment)				
OCD Representative Signature; Approval Date:					
	Permit Number:				
21.					
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an opproved closure plan has been obtained and the closure activities have been completed.					
	Closure Completion Date:				
22. Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Cloud if different from approved plan, please explain.	osure Method Waste Removal (Closed-loop systems only)				
23. Closure Report Regarding Waste Removal Closure For Closed-loop Systems That U	Itilize Above Ground Steel Tanks or Haul-off Rins Only				
Instructions: Please indentify the facility or facilities for where the liquids, drilling flu	ids and drill cuttings were disposed. Use attachment if more than				
two facilities were utilized. Disposal Facility Name:	sal Facility Permit Number:				
	sal Facility Permit Number:				
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?					
Yes (If yes, please demonstrate compliance to the items below) No	·				
Required for impacted areas which will not be used for future service and operations:					
Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation					
Re-vegetation Application Rates and Seeding Technique	· · · · · · · · · · · · · · · · · · ·				
24. Closure Report Attachment Checklist: Instructions: Each of the following items mu.	st be attached to the clasure report. Please indicate, by a check				
mark in the box, that the documents are attached.	an be unactical to the closing reports a reason materies, by a circum				
Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure)					
Plot Plan (for on-site closures and temporary pits)					
Confirmation Sampling Analytical Results (if applicable)					
Waste Material Sampling Analytical Results (required for on-site closure) Disposal Facility Name and Permit Number					
Soil Backfilling and Cover Installation					
Re-vegetation Application Rates and Seeding Technique					
Site Reclamation (Photo Documentation) On-site Closure Location: Latitude Longitude	NAD: □1927 □ 1983				
25.					
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure report is belief. I also certify that the closure complies with all applicable closure requirements and	true, accurate and complete to the best of my knowledge and				
	itle:				
Signature:	Date:				
c-mail address:	'elephone:				

Survey Information

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV

2040 South Pacheco, Santa Fe, NM 87505

Section

13 Joint or Infill

N

Township

Range

14 Consolidation Code

U

UL or lot no.

12 Dedicated Acres

40.00

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State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION 2040 South Pacheco Santa Fe, NM 87505 Form C-102 **
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

AMENDED REPORT

County

WELL LOCATION AND ACREAGE DEDICATION PLAT										
'AM Number 30-015-29434			Pool Code 47545 NASH DRAW BRUSHY CANYON OIL POOL					IL POOL		
⁴ Property 010735	Code	NASH	UNIT * Well Number 29							
'OGRID 021712								'Elevation 2991.		
¹⁰ Surface Location										
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/Wes	t line	County
J	13	23-S	29-E		1980	SOUTH	2310	EAS	T	EDDY
11 Bottom Hole Location If Different From Surface										

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

North/South line

Feet from the

East/West line

Feet from the

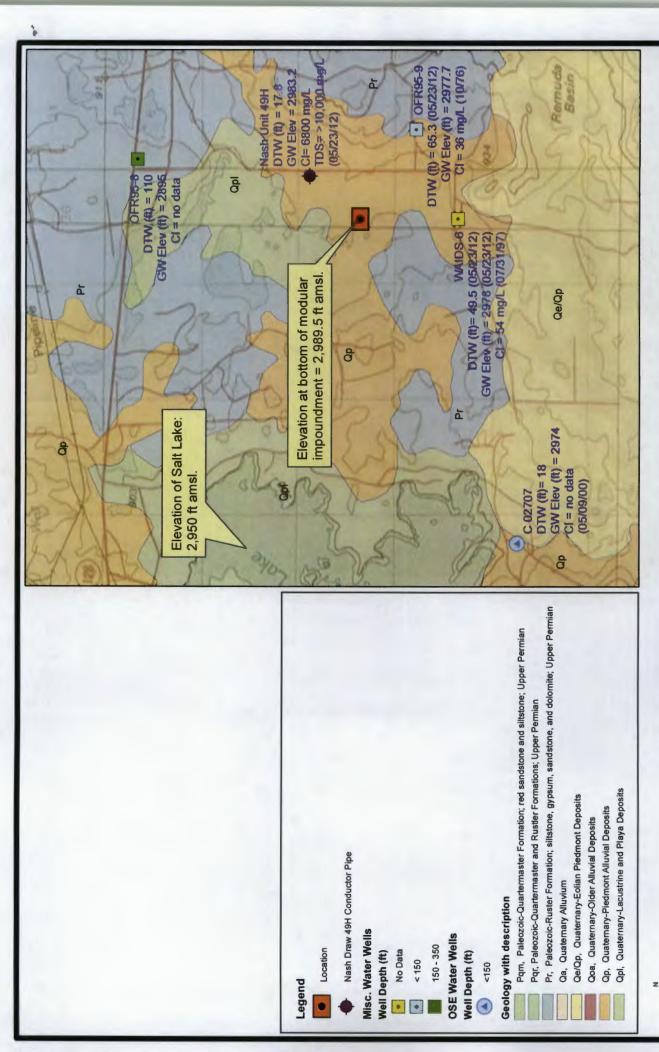
15 Order No.

Lot Idn

16			17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief
			ignature CAROL J. GARCIA Printed Name PRODUCTION RECORDS MANAGER itle JANUARY 15, 1997 ate
		2310	18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. NOVEMBER 26, 1996 see of Survey REDO
	/980/		Signature and Scal of Professional Surveyor:

Site Specific Information

- Figures 1 9
- Siting Compliance Demonstration
- Design and Construction Demonstration
- Operational Compliance
- Closure Requirements



R.T. Hicks Consultants, Ltd Albuquerque, NM 87104 Ph: 505.266.5004

Miles

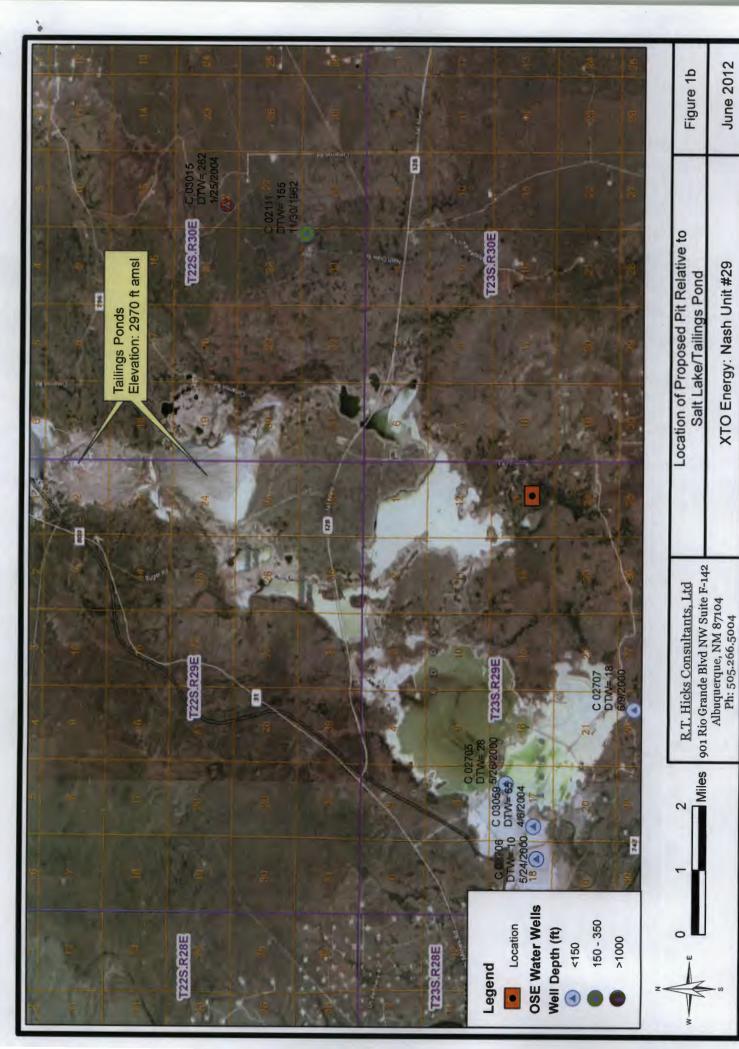
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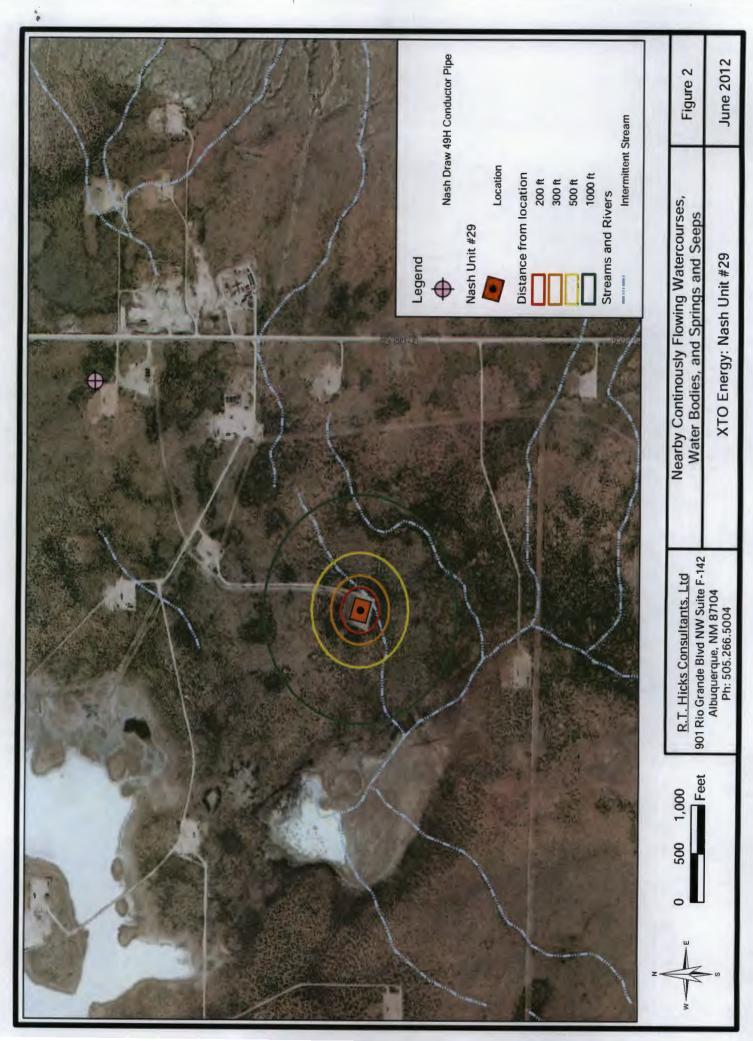
901 Rio Grande Blvd NW Suite F-142

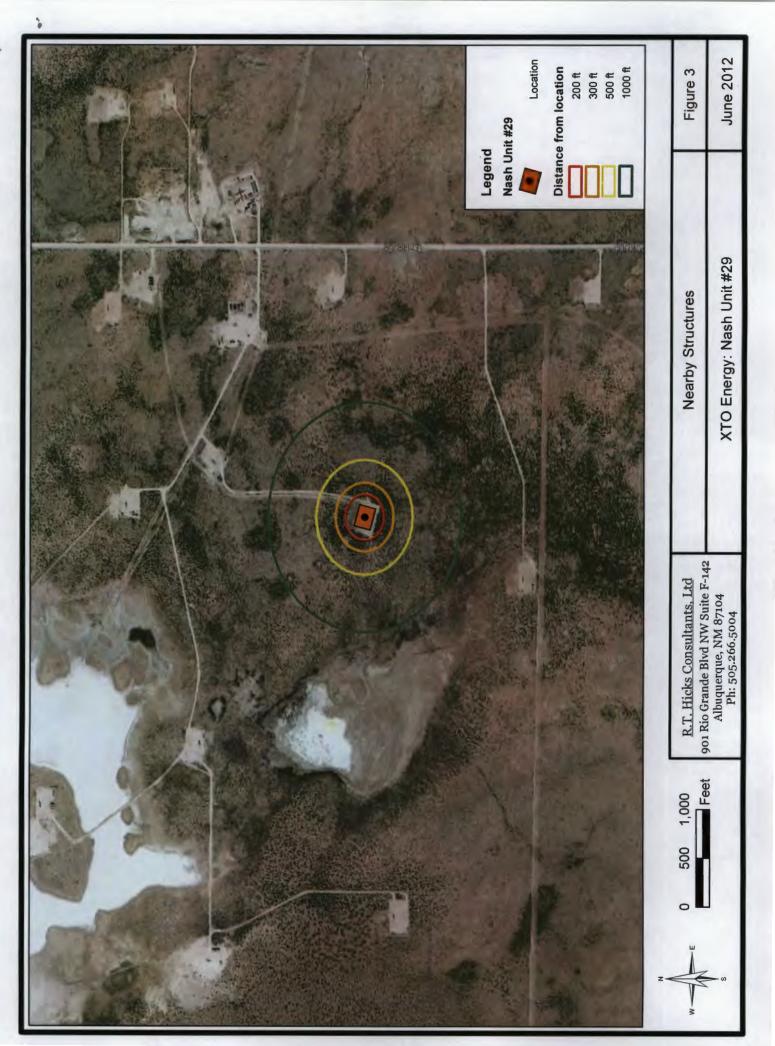
Nearyby Water Wells and Geology XTO Energy: Nash Unit #29

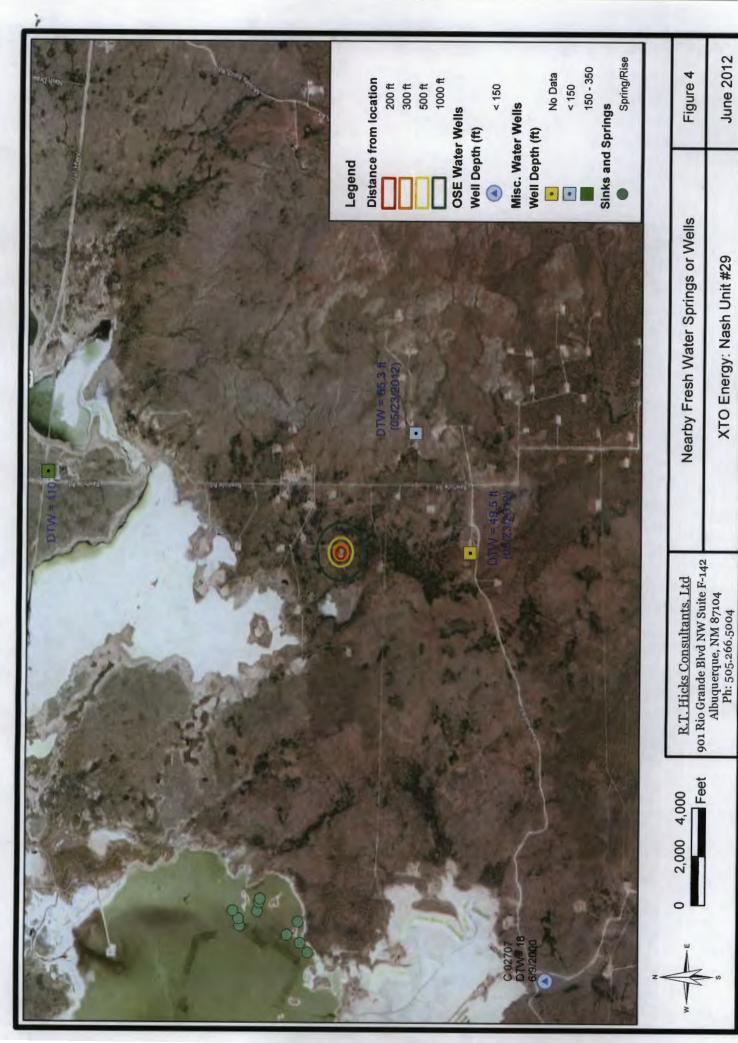
June 2012

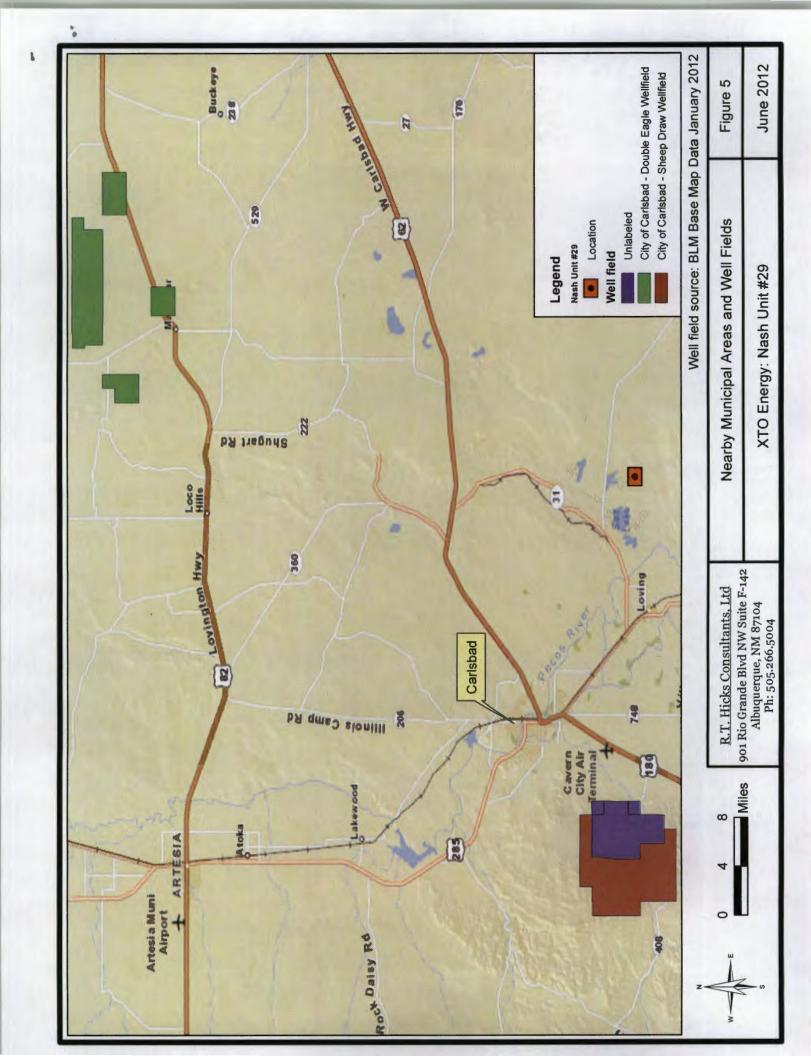
Figure 1a













U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands

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May 10, 2012

Wetlands

Estuarine and Marine Deepwater Freshwater Forested/Shrub Freshwater Emergent

Estuarine and Marine Freshwater Pond

Riverine Lake

Other

Riparian

Herbaceous

Forested/Shrub

Location

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Rilppe web site.

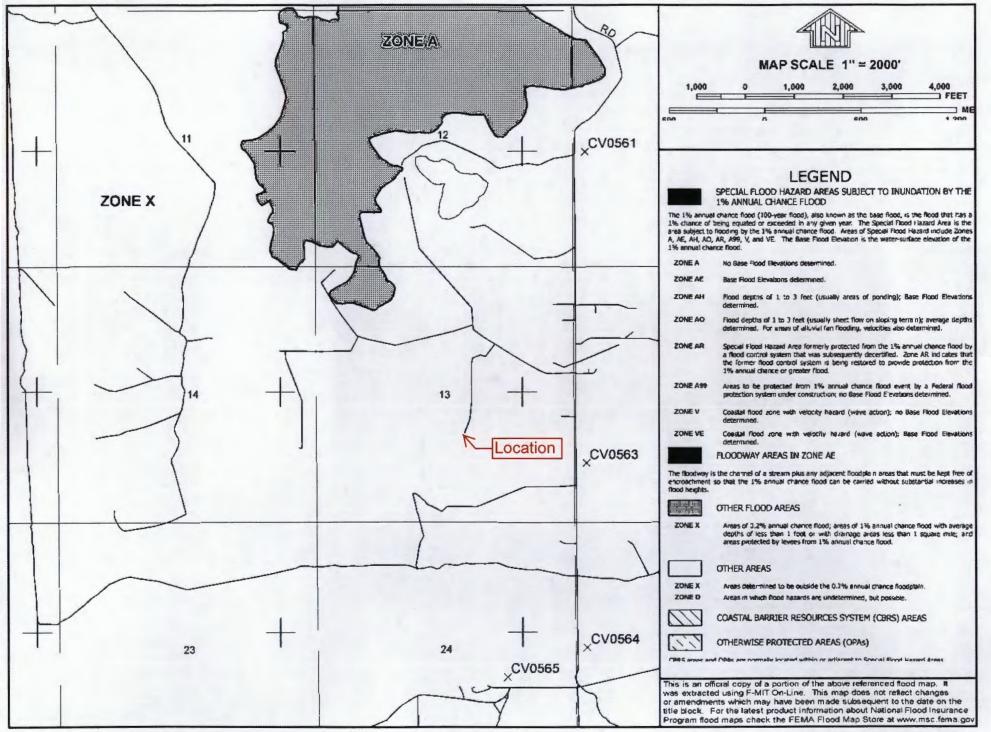
User Remarks:

Figure 6

901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004

XTO Energy: Nash Unit #29

June 2012



Siting Criteria (NMAC 19.15.17.10) with hydrogeologic report for depth to groundwater compliance demonstration

Figure 1a – 1b, Appendix SSI-1 (Site Visit Photos), and the hydrogeologic data presented below demonstrates that groundwater (fresh water as defined by NMOCD Rules that has a TDS < 10,000 mg/L) at the location is between 50 and 100 feet below the bottom of the temporary pit.

- a. The location of the modular impoundment that shall temporarily store treated produced water is plotted as an orange rectangle with a black dot in the center (Figures 1a and 1b).
- b. Water wells in the OSE database are shown as color coded circles as defined by the total depth of the well. OSE well labels include the permit number, depth to groundwater (ft) and date of measurement some OSE wells are mis-located in the WATERS database as older wells are plotted in the center of the quarter quarter of the Section Township and Range.
- c. Water wells in the Go-Tech WAIDS database and Open File Report 95 are color coded squares defined by the total depth of the well as shown in Figures 1a and 1b. The closest fresh water well listed in publicly available databases is about 0.97 miles southeast of the modular impoundment.

Geology

The modular impoundment is located on Quaternary-Piedmont alluvial deposits (Figure 1a). The elevation at the bottom of the modular impoundment is 2,989.5 feet amsl. Underlying the alluvial deposits is the Rustler Formation that is composed of anhydrite, gypsum, interbedded sandy clay and shale, and irregular beds of dolomite. The Rustler overlies the Salado Formation.

The basal beds of the Rustler (Virginia Draw Member, Prv in OF-GM-77) consist of porous gypsum in a large part of Nash Draw and southwest to Malaga Bend. Hendrickson and Jones (1952) state that these basal beds commonly contain brine saturated with sodium chloride. The brackish groundwater within Nash Draw (in the alluvium and lower Rustler) flows southwest past what is mapped as a Salt Lake and discharges into the Pecos River near Malaga Bend.

Above the basal brine aquifer in the Rustler is the 35-foot thick unit of dolomitic limestone at the top of the lower part of the Rustler (probably the Culebra Dolomite, Prc). Fluid from this brackish aquifer is used by the potash mines to sluice tailings (Hendrickson and Jones, 1952).

Overlying the Rustler are Quaternary alluvial, lacustrine and piedmont deposits. Figure 1a shows that the modular impoundment lies on piedmont deposits (Qp) with playa/lacustrine deposits (Qpl) to the west and north and exposures of Rustler to the southeast and southwest.

Groundwater Elevations and Chemistry

Groundwater data from water wells near the modular impoundment location are shown on Figure 1a and 1b. Figure 2 shows that the Salt Lake/tailing pond, approximately 1,400 feet west of the modular impoundment location, is influenced by fluids from a nearby potash mine/mill (Figure

Modular Impoundment Design Plan – XTO Energy

1b). In the upper central portion of the aerial photograph (Figure 1b); evidence of the tailings pile is clear – fluids emanating from the mill flow into the Salt Lake/tailing ponds along with occasional stormwater runoff. The fluids in the Salt Lake/tailings pond are a source of recharge to groundwater. As will be discussed below, TDS concentrations at Nash Unit #49H (3,250 feet to the east) provide evidence of the recharge effect on groundwater quality. The modular impoundment site is located even closer to the Salt Lake/tailings pond (about 1,400 feet east). Because concentrations will decrease continuously with distance from the Salt Lake/tailings pond due to dispersion, it is expected that concentrations in groundwater will be higher than those at Nash Unit #49H.

Water data within 1-mile

1

Hicks Consultants gauged and sampled groundwater from the recent drilling of the rathole (TD = 50 feet) at Nash Unit 49H, approximately 0.6 miles northeast of the modular impoundment. Brackish groundwater is present at 17.8 feet below ground surface (2,983.2 ft amsl). Chloride field titration exhibited 6,800 mg/L. A subsequent Hicks Consultants gauging event on May 23, 2012 of the conductor pipe at Nash Draw 49H exhibited TDS readings exceeding 10,000 ppm (Hanna pH/EC/TDS meter, model HI 87130).

Approximately 1-mile south of the modular impoundment is a water well (WAIDS-6) listed in Go-Tech's WAIDS database. This well is listed as a stock well completed within the Rustler formation; the WAIDS database provides no total depth or depth to groundwater data. However, the WAIDS reports a chloride concentration of 54 mg/L (07/31/1997). Hicks Consultants measured the depth to groundwater on May 23, 2012 at 49.5 feet below ground surface (2,978 ft amsl).

Approximately one mile southeast of the modular impoundment, Open File Report -95³ describes a stock well (OFR95-9) completed within the Rustler formation with a depth to groundwater of 54.9 feet (10/1977) and a total well depth of 59.6 feet. The WAIDS database lists total depth of the well at 100 feet (12/10/76) with a chloride concentration of 36 mg/L. Hicks Consultants measured this well on May 23, 2012 with a depth to groundwater of 65.3 feet (2,977.7 feet amsl).

Water data beyond 1-mile

Approximately 2.3 miles north-northeast of the modular impoundment, New Mexico Bureau of Mines and Mineral Resources Open File Report -95 shows a well (OFR95-8) with a depth to groundwater of 110 feet below ground surface (2,895 ft amsl) and a total depth of 200 feet. Chloride data for this well does not exist. The difference between groundwater elevation at OFR95-8 and the bottom of the modular impoundment is approximately 95 feet. Therefore, we believe that groundwater that has the potential to be protectable (<10,000 mg/L TDS) exists between 50 and 100 feet below the modular impoundment.

Approximately three miles southwest of the modular impoundment, the OSE database describes well C 02707 with a depth to groundwater at 18 feet below ground surface (2,974 ft amsl) and a total depth of 40 feet. No chloride data exists for this well

³ http://geoinfo.nmt.edu/publications/openfile/details.cfml?Volume=95

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Approximately 4.8 miles west of the modular impoundment, the OSE database describes well C 02706 with a depth to groundwater at 10 feet below ground surface (2,942 ft amsl) and a total depth of 17 feet (Figure 1b). Water quality data from WAIDS database shows chloride concentrations ranging from 98,000 mg/L to 203,700 mg/L with an average concentration of 155,200 mg/L. The high chloride concentrations in groundwater within the alluvial sediments near the Salt Lake/tailings pond are consistent with the sources of this fluid.

Conclusion

The two wells and the rathole within 1-mile of the location (WAIDS-6, OFR95-9, Nash Unit #49H) suggest a local groundwater gradient to the southwest, consistent with local topography and regional southwest gradient (Hendrickson and Jones, 1952). Groundwater elevations in these wells range from 2,978 to 2,983 ft amsl and are considered to be within the same shallow groundwater zone less than 50 feet below ground surface. Subtracting the above groundwater elevations from the elevation of the bottom of the modular impoundment suggests that groundwater beneath the location is approximately 6 to 11 feet below ground surface.

Furthermore, TDS concentrations greater than 10,000 mg/L at Nash Unit #49H demonstrate that the shallow groundwater zone is impacted by the Salt Lake/tailing pond 3,250 feet to the west (Figure 2). The modular impoundment site is about 1,400 feet east from the Salt Lake/tailing pond, about 1,800 feet closer to the Salt Lake/tailing pond than Nash Unit #49. Because the concentration gradient from the Salt Lake/tailing pond will decrease continuously with distance from the pond due to dispersion, groundwater beneath the site will have higher concentrations than the groundwater at Nash Unit #49H. Groundwater exhibiting TDS concentrations greater than 10,000 mg/L is not defined as fresh water by 19.15.2.7.F (3) NMAC and is therefore not protectable. Because concentrations will be higher than those at Nash Unit #49H (TDS >10,000mg/L), the groundwater beneath the modular impoundment site is not protectable by 19.15.7.2.F(3) NMAC.

The next groundwater zone that may exist is between 50 to 100 feet below the modular impoundment. Evidence of this groundwater zone is exhibited at OFR95-8, 2.3 miles north of the location. Groundwater data at OFR95-8 suggest the difference between groundwater elevation at OFR95-8 and the bottom of the modular impoundment is approximately 95 feet. Therefore, we believe that groundwater that has the potential to be protectable (TDS < 10,000 mg/L) exists between 50 and 100 feet below the modular impoundment.

Siting Criteria Compliance Demonstration – continued (NMAC 19.15.17.10)

The information identified in Item 10, "Siting Criteria" of the C-144 is presented below. The descriptions below are associated with the maps presented in Figures 2-9, attached.

- Figure 2 Demonstrates that the location is not within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
 - a. Data from the USDA's National Hydraulic Dataset shows an intermittent stream (shown as a light blue dotted line in Figure 2) transecting the location.
 - b. Site reconnaissance identified no evidence of a watercourse as defined by NMAC 19.15.2.7. Photo 1, at right, shows the location of the "intermittent stream" identified by the USDA. As shown in Photo 1, no watercourse was identified having definite banks and beds with visible evidence of the occasional flow of water.
 - No other watercourses, water bodies, springs, or seeps exist with 200-feet of location.



Photo 1: Photo of USDA identified intermittent stream. No definite banks and beds with visible evidence of occasional flow of water were identified.

- Figure 3 Demonstrates that the location is not within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. No nearby structures exist within 300 feet of location.
 - a. As shown on the aerial photograph, no structures exist within 300 feet of the location.
 - b. Site reconnaissance supports this conclusion.
- Figure 4 Demonstrates that the location is not within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.
 - a. The closest spring is approximately 2.3 miles northwest located within the Salt Lake of the potash mining district.
 - b. The closest water well listed in public files is approximately 0.9-mile southeast of the location.
- Figure 5 Demonstrates that the location is not within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.
 - a. The closest incorporated municipality is Loving, NM; approximately 9 miles west.
 - b. The closest well field is approximately 23.5-miles west of the location.

Figure 6 -- Demonstrates the location is not within 500 feet of wetlands.

- a. The US Fish and Wildlife Wetlands Inventory does not identify wetlands within 500 feet of location.
- b. Site reconnaissance identified no wetlands with 500 feet of location.

Figure 7 --- Shows that the location is within the Potash Mining District.

a. The closest potash mining tunnel is 1.5 miles north-northwest of the location. The closest

surface mining location is 0.7 miles northwest. The MILS database lists the surface mine as a Prospect.

b. The construction of the modular impoundment will not require more than 18 inches excavation into the subsurface. The existing production pad consists of 6 inches of caliche on top of very dense clay (Photo 2). We conclude the construction of the modular impoundment will not compromise the subsurface integrity.



Photo 2: 6-inch caliche pad thickness. Dense clay underlies the pad.

Figure 8 — Shows that the location may lie within an unstable area

- a. The location is located within a known karst area identified by the USGS. Site reconnaissance observed no evidence of kart features (fissures, tubes, or caves) near the location.
- b. The above ground modular impoundment will be placed upon a 6-inch caliche production pad. The production pad covers approximately 1.2 acres. Beneath the production pad is very dense clay.
- c. The composition of the production pad and the underlying dense clay provides engineered surface stability to ensure that the modular impoundment's integrity is not compromised.

Figure 9 --- Demonstrates that the location is not within a 100-year floodplain.

a. The location is within Zone X of FEMA Flood Zone Designation. Zone X is defined as an area of minimal flood hazard and above the 500-year flood level.

Design and Construction Specifications (NMAC 19.15.17.11)

A. General Specifications. An operator shall design and construct a pit, closed-loop system, below-grade tank or sump to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.

Response -

XTO Energy shall construct a modular impoundment fluid storage system provided by

Poseidon Concepts. The modular impoundment system model is the Atlantis⁴. Photo 3, right, is an example of Poseidon's modular impoundment. The modular impoundment shall be constructed according to manufacturer's specifications as described in Section 19.15.17.11.F, below. The modular impoundment is



Photo 3: Example of Poseidon's fluid storage system.

engineered to prevent contamination of fresh water and protect public health and the environment.

The purpose of the modular impoundment is the temporary storage of treated produced water in a centralized location for six off-site well stimulations. The modular impoundment shall be constructed on an existing well pad currently used for operation and maintenance of the Nash Unit #29 well. XTO Energy shall restore the production pad to pre-existing condition prior to the installation of the modular impoundment.

B. Stockpiling of topsoil.

Response -

The modular impoundment shall be constructed on an existing production pad at Nash Unit #29. No additional surface disturbance shall occur. After modular impoundment closure, the production pad will remain in-place until proper abandonment of the production well.

C. Signs.

Response -

The existing sign at Nash Unit #29 production well, which is on the same production pad as the proposed location, shall be used. Photo 4 is a photograph of



Photo 4: Sign at Nash Unit #29 to be used in conjunction with the modular impoundment.

⁴ http://poseidonconcepts.com/Customer-Centre/Models/index.php

the existing sign.

D. Fencing.

Response -

As described in Section 19.15.17.11.F, below, the modular impoundment is constructed with 12-foot high steel walls. In lieu of fencing to prevent unauthorized access and exclude entry of livestock, XTO Energy asks for administrative approve to use the modular impoundment's steel 12-foot high walls as an alternative to fencing. XTO Energy concludes that the 12-foot high steel walls are superior to fencing.

- F. Temporary Pits. The operator shall design and construct a temporary pit in accordance with the following requirements.
 - (1) The operator shall design and construct a temporary system to ensure the confinement of liquids to prevent unauthorized releases.

Response -

The modular impoundment system is constructed from 5/8" thick steel welded to 4"x4"x144" vertical steel supports (see Photo 5) and is engineered to withstand the hydrostatic pressures exerted downwards and outwards by the weight of the fluid when full. The panels are connected with 1" thick steel plates that fit over solid steel "bosses" welded to the modular impoundment wall. These plates are then locked to the bosses with locking pins. The locking pins are secured with safety cotter pins (see Appendix

SSI-2 for interlocking panel details and patent). The 30 mil LLDPE liner is then clamped to the top of these walls leaving an extra 2 feet of liner material hanging outside of the modular impoundment to provide a safety margin (Photo 6, below).



Photo 5: Interlocking panels of the modular impoundment.

The modular impoundment system was

designed and engineered by Beck Engineering, Ltd for Poseidon Concepts. A letter from Beck Engineering (see Appendix SSI-2) is stamped by a Professional Engineer and confirms that the modular impoundment is structurally designed to resist all anticipated forces on the modular impoundment panels and panel connections from the start of erection to the complete filling of the modular impoundment. The modular impoundment is patented in Canada. Patent is pending for the United States. Therefore, Poseidon will not release schematics of the modular impoundment design until patenting in the United States is complete.

During installation, a representative from Poseidon shall be present. Appendix SSI-3 contains the set-up procedures. The set-up procedures were provided by Poseidon.



Photo 6: Clamping system holding liner in place. Spacing between clamping is 3-feet.

(2) A temporary pit shall have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. The operator shall construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V). The appropriate division district office may approve an alternative to the slope requirement if the operator demonstrates that it can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.

Response -

The modular impoundment shall be placed on the existing Nash Unit #29 production pad. The existing production pad is constructed of approximately 6-inches of caliche overlying very dense clay (see Photo 2).

Prior to installation, the production pad will be prepared to make it smooth and free of rocks. A minimum of 10 oz. per square foot nonwoven geotextile material from Brawler (product WID10, see Appendix SSI-2) shall be placed between the production pad and the liner of the modular impoundment to prevent liner rupture or tear from the underlying pad.

In lieu of slopes no greater than 2H:1V, XTO Energy asks for administrative approval for vertical slopes (steel walls) engineered for the modular impoundment. The modular impoundment's vertical steel walls are constructed from 5/8" thick steel welded to 4"x4"x144" vertical steel supports (see Photo 5) and is engineered to withstand the hydrostatic pressures exerted downward and outward by the weight of the fluid when full. The panels are connected with 1" thick steel plates that fit over solid steel "bosses" welded to the modular impoundment wall. These plates are then locked to the bosses

with locking pins. The locking pins are secured with safety cotter pins. Modular impoundment integrity will not fail or collapse because of the engineered design specifications.

A sump area in the configuration of a "Y", with each leg approximately 15 feet long, shall be excavated into the production pad to accommodate the modular impoundment suction pipes. The sump area is excavated 18 inches below the elevation of the production pad. The sump walls shall be no greater than 2H:1V sloping on the sides of the sump area, and an additional layer of the 10 oz. per square foot nonwoven geotextile material, as well as visual inspection, after excavation but prior to installation, to be sure that the underlying soil represents a property constructed smooth foundation free of rocks.

(3) The operator shall design and construct a temporary pit with a geomembrane liner. The geomembrane liner shall consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.

Response -

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In lieu of a 20-mil string reinforced LLDPE liner, XTO Energy asks for administrative approval for a stronger and thicker 30 mil LLDPE liner. The liner material used for the modular impoundment is a 30-mil LLDPE material provided by GSE. See Appendix SSI-2 for specifications and data sheets on the GSE 30 mil UltraFlex Smooth Geomembrane liner. The liner is resistant to petroleum hydrocarbons, salts and acidic, alkaline solutions, and ultraviolet light. The 30 mil GSE liner is equivalent to or better than a 20-mil string reinforced LLDPE liner.

(4) The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall overlap liners four to six inches and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope. The operator shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.

Response –

The liner is manufactured with factory welds and seams going in one direction. The east and west oriented liner panels have a maximum width of 25-feet with 5-inch seams (see liner seam orientation diagram in Appendix SSI-4). The interior panels shall be 24.6-feet wide; with the width of one of the two middle panels adjusted to ensure that the overall dimension of the liner is 190x190 feet. All factory welds are designed according to GSE manufacture specifications and are engineered to withstand the weight of the water.

The outermost east- west panel liner seams are approximately 7-feet on the north-south axis from the floor-wall junction of the modular impoundment. The seam pattern, panel widths, and seam orientation will minimize liner seams and will orientate the seams up and down, not across the slope (steel walls).

(5) Construction shall avoid excessive stress-strain on the liner.

Response -

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In accordance with the set-up procedures (Appendix SSI-3), additional 10oz per square foot geotextile material is placed on any "pinch point" where the liner could either have direct contact with the walls or become pinched between walls and/or the walls and the ground, the sump area, and the C-clamps holding the liner to the top of the modular impoundment.

As shown on the liner seam orientation diagram in Appendix SSI-4, all of the seams of the 25-foot wide panels are in an east-west orientation. Hence, all of the seams run up and down the vertical slopes rather than across the slopes. On the north-south axis, the closest east-west seam to the bottom wall corner is 7-feet. This seam orientation prevents undue stresses and stain on the liner material and seams.

(6) Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.

Response -

A 10 oz. per square foot nonwoven geotextile shall be placed between the production pad and the liner and at pinch-points where the liner could either have direct contact with the walls or become pinched between walls and/or the walls and the ground, including the C-clamps holding the liner to the top of the modular impoundment. An additional second geotextile layer shall be placed between the sump areas and the LLDPE liner.

(7) The operator shall anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.

Response –

In lieu of an anchor trench, XTO Energy asks for administrative approval to use C-clamps to anchor the liner to the top of the modular impoundment (see Photo #6). The purpose of the clamps is to prevent the liner material from falling in and compromising the ability of the modular impoundment to contain fluids.

Each 3-foot clamp section is separated by three foot spacing. The sequence is repeated along the top of the modular impoundment. The liner overlaps the modular impoundment by at least 24 inches, providing a robust safety factor if the liner should need adjustment after installation.

(8) The operator shall ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit.

Response -

The intake pipe for the suction system will sit on the floor in the sump area. The suction intake is a 15-foot long pipe with legs (to prevent rotation) and has horizontal slots for the fluid that are 4-inches up the side of the pipe. The suction pipe riser is a 10-inch pipe that

mounts to the top of the modular impoundment and descends down the exterior wall (Photo #7) and connects to a pump.

The 4-inch filler pipes mount to the top of the modular impoundment in similar fashion to the suction pipe. The discharge end of the filler pipe is 4-inches from the bottom of the modular impoundment.

One suction pipe and four filler pipes shall be installed on the modular impoundment.



Photo 7: Photograph of the suction and filler pipes.

(9) The operator shall design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion shall surround a temporary pit to prevent run-on of surface water. During drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig is not required to have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.

Response -

A 2-foot high berm shall be constructed around the modular impoundment to prevent run-on of surface water. As there are no drilling or workover operations at the location, the berm will surround the entire modular impoundment. A 2-foot freeboard shall be maintained to prevent overflow.

(10) The volume of a temporary pit shall not exceed 10 acre-feet, including freeboard.

Response -

The volume (full capacity) of the modular impoundment plus the three 18-inch deep by 15-foot long sump areas is less than 42,000 bbls (about 5.5 acre-feet). During normal operation, the modular impoundment will hold less water to allow for 2-feet of freeboard.

Operational Requirements (NMAC 19.15.17.12)

Note: The modular impoundment will contain treated produced water. Between well stimulations, the modular impoundment will contain enough treated produced water to hold down the liner. Weekly inspections shall occur when there is 1-foot depth or less of treated produced water in the modular impoundment. Daily inspections shall occur when there is greater than 1-foot depth of treated produced water in the modular impoundment.

- **A. General Specifications**. XTO Energy shall maintain and operate the modular impoundment according to manufacturer's operating and maintenance specifications as described in Section 19.15.17.12.B, below.
 - (1) The operator shall operate and maintain a pit to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment.

Response –

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations. XTO Energy shall inspect the modular impoundment for liner integrity, to ensure that a 2-foot freeboard is maintained, and to inspect berm stability around the modular impoundment to protect from surface water run-on/run-off.

(2) The operator shall recycle, reuse, reclaim or dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment.

Response -

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations. Unused treated produced water, if present, will be sent to XTO Energy's SWD-53 well for recycling or a division-approved disposal facility. Proper disposal of excess treated produced water prevents the contamination of fresh water and protects public health and the environment.

(3) The operator shall not discharge into or store any hazardous waste in a pit, closed-loop system, below-grade tank or sump.

Response -

XTO Energy shall operate the modular impoundment for the temporary storage of treated produced water for off-site well stimulations.. XTO Energy shall not discharge hazardous waste into the modular impoundment.

(4) If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator shall notify the appropriate division

district office within 48 hours of the discovery and repair the damage or replace the liner.

Response -

If the liner integrity is found to be compromised during an inspection, XTO Energy shall notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.

(5) If a pit, below-grade tank, closed-loop system or sump develops a leak, or if any penetration of the pit liner, below-grade tank, closed-loop system or sump occurs below the liquid's surface, then the operator shall remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the pit liner, below-grade tank, closed-loop system or sump.

Response -

If the modular impoundment contains any volume of liquid and liner integrity is found to be compromised below the liquid's surface, XTO Energy shall remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the modular impoundment.

(6) The injection or withdrawal of liquids from a pit shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

Response -

Inspections shall verify that suction (intake), riser and filler pipes (see Photo #7) are intact and properly connected and secured.

The intake pipe for the suction system will sit on the floor in the sump area. The suction intake is a 15-foot long pipe with legs (to prevent rotation). The suction pipe riser is a 10-inch pipe that mounts to the top of the modular impoundment and descends down the exterior wall and connects to a pump.

The 4-inch filler pipes mount to the top of the modular impoundment in similar fashion to the suction pipe. The discharge end of the filler pipe is 4-inches from the bottom of the modular impoundment bottom to prevent damage to the liner by discharging operations.

(7) The operator shall operate and install a pit, below-grade tank or sump to prevent the collection of surface water run-on.

Response –

The modular impoundment's 12-foot high steel walls prevent the collection of surface water run-on. XTO Energy shall provide additional prevention to reduce

undercutting of the steel walls from surface water run-on by the construction of a 2-foot high berm along the bottom perimeter of the modular impoundment. Inspections shall verify that the berm surrounding the modular impoundment remains intact. Berm sections that lose integrity shall be repaired within 48 hours.

(8) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface

Response -

XTO Energy shall verify that no oil is on the modular impoundment surface. If oil is observed, the oil shall be removed using an absorbent boom or other device and properly disposed at an approved facility.

- **B.** Temporary pits. An operator shall maintain and operate a temporary pit in accordance with the following additional requirements
 - (1) Only fluids used or generated during the drilling or workover process may be discharged into a temporary pit. The operator shall maintain a temporary pit free of miscellaneous solid waste or debris. The operator shall use a tank made of steel or other material, which the appropriate division district office approves, to contain hydrocarbon-based drilling fluids. Immediately after cessation of a drilling or workover operation, the operator shall remove any visible or measurable layer of oil from the surface of a drilling or workover pit.

Response –

The modular impoundment shall be used for temporary storage of treated produced water for well stimulation. No other fluids other than treated produced water shall be discharged into the modular impoundment.

(2) The operator shall maintain at least two feet of freeboard for a temporary pit.

Response -

The modular impoundment shall be inspected daily by XTO Energy when containing more than 1-foot of treated produced water to ensure that a 2-foot freeboard is maintained.

(3) The operator shall inspect a temporary pit containing drilling fluids at least daily while the drilling or workover rig is on-site. Thereafter, the operator shall inspect the temporary pit weekly so long as liquids remain in the temporary pit. The operator shall maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator shall file a copy of the log with the appropriate division district office when the operator closes the temporary pit.

Response –

XTO Energy shall inspect the modular impoundment daily when containing more than 1-foot of treated produced water for: liner integrity, to ensure that a 2-foot freeboard is maintained, to prevent the presence of oil on the fluid surface, and to maintain berm stability around the modular impoundment to protect from surface water run-on/run-off. When less than one foot or less of treated produced water is present in the modular impoundment, XTO Energy shall inspect weekly. A log of these inspections shall be maintained by XTO Energy and made available upon division request. The log shall be filed with the modular impoundment closure report.

(4) The operator shall remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling or workover rig. The operator shall note the date of the drilling or workover rig's release on form C-105 or C-103 upon well or workover completion. The appropriate division district office may grant an extension of up to three months.

Response -

The purpose of the modular impoundment is to provide fluid for six off-site well stimulations. The modular impoundment is not associated with a drilling or workover rig. The anticipated duration of the six stimulations is approximately 4 months. After the transfer of treated produced water to the 6th off-site well stimulation is complete, XTO Energy shall within 30-days remove remaining treated produced water from the modular impoundment. The modular impoundment is not associated with a drilling or workover rig. Therefore, XTO shall mark the transfer completion date on the C-144 and C-105 in lieu of rig release date.

Closure Requirements (NMAC 19.15.17.13)

A. Time requirements for closure per NMAC 19.15.17.13.

(7) An operator shall close any other permitted temporary pit within six months from the date that the operator releases the drilling or workover rig. The appropriate division district office may grant an extension not to exceed three months.

Response –

After the transfer of treated produced water to the 6^{th} off-site well stimulation is complete, XTO Energy shall within six months close the modular impoundment. The modular impoundment is not associated with any drilling or workover rig.

B. Closure methods for temporary pits.

- (1) Waste Excavation and removal
 - a) The operator shall close the temporary pit by excavating all contents and, if applicable, synthetic pit liners and transferring those materials to a division-approved facility.

Response -

Prior to disassembly of the modular impoundment, any remaining treated produced water shall be removed and injected into XTO Energy's SWD-53 (API#: 3001539400).

After the remaining fluid is removed the liner material, geomembranes and non-reusable pipe (suction and filler pipes) shall be transported to one of the following division-approved facilities:

- Controlled Recovery, Inc NM-01-0006
- Lea Land, LLC NM-01-0035

Reusable pipes, pumps, and other components owned by Poseidon will be loaded onto Poseidon trailers and transported off site.

- **b)** The operator shall test the soils beneath the temporary pit to determine whether a release has occurred.
 - i. For temporary pits where ground water is between 50 and 100 feet below the bottom of the temporary pit or for cavitation pits allowed pursuant to Subparagraph (a) of Paragraph (1) of Subsection A of 19.15.17.10 NMAC, the operator shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for benzene, total BTEX, TPH, the GRO and DRO combined fraction and chlorides to demonstrate

that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 500 mg/kg or the background concentration, whichever is greater. The operator shall notify the division of its results on form C-141. The division may require additional delineation upon review of the results.

Response –

XTO Energy shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for benzene (EPA 8260B), total BTEX (EPA 8260B), TPH (EPA 418.1), the GRO and DRO combined fraction (EPA SW-846 method 8015M) and chlorides (EPA 300.1). XTO Energy shall notify the division of its results on form C-141.

c) If the operator or the division determines that a release has occurred, then the operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

Response -

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If the division or XTO Energy determines that a release has occurred, XTO Energy shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

d) If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (b) of Paragraph (1) of Subsection B of 19.15.17.13 NMAC, then the operator shall backfill the temporary pit excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and revegetate the site. The division-prescribed soil cover, recontouring and revegetation requirements shall comply with Subsections G, H and I of 19.15.17.13 NMAC.

Response -

The modular impoundment is an above ground modular impoundment, no backfilling is necessary except the "Y" shaped sump area that has an excavated depth of 18-inches. The sump area will be filled with dense clay and topped with 6-inches of caliche to match existing production pad construction and grade. In lieu of revegetation, XTO Energy asks division approval for the reclamation of the sump area to pre-existing conditions – an active production pad for the Nash Unit #29 well. See 19.15.17.13.G, below.

G. Reclamation of pit locations, on-site burial locations and drying pad locations.

(1) Once the operator has closed a pit or trench or is no longer using a drying pad, belowgrade tank or an area associated with a closed-loop system, pit, trench or below-grade tank, the operator shall reclaim the pit location, drying pad location, below-grade tank location or trench location and all areas associated with the closed-loop system, pit, trench or below-grade tank including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator shall substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC, recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and revegetate according to Subsection I of 19.15.17.13 NMAC.

Response -

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The modular impoundment is an above ground fluid storage system, no backfilling is necessary except the "Y" shaped sump area that has a depth of 18-inches. The sump area shall be reclaimed to pre-existing conditions, an active production pad for the Nash Unit #29 well. The sump area shall be backfilled with dense clay and topped with 6-inches of caliche to match existing production pad grade. Revegetation of the sump area shall occur during reclamation activities for Nash Unit #29 plugging and abandonment per agreement with BLM (Appendix SSI-5).

(2) The operator may propose an alternative to the re-vegetation requirement if the operator demonstrates that the proposed alternative effectively prevents erosion, and protects fresh water, human health and the environment. The proposed alternative shall be agreed upon by the surface owner. The operator shall submit the proposed alternative, with written documentation that the surface owner agrees to the alternative, to the division for approval.

Response -

In lieu of re-vegetation, XTO Energy asks the division to allow interim reclamation to pre-existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Re-vegetation shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

H. Soil cover designs.

(1) The soil cover for closures where the operator has removed the pit contents or remediated the contaminated soil to the division's satisfaction shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

Response -

In lieu of soil cover, XTO Energy asks the division to allow interim reclamation to pre-

existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Soil cover shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

(3) The operator shall construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Response -

In lieu of soil cover, XTO Energy asks the division to allow interim reclamation to pre-existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Proper soil cover construction shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

I. Re-vegetation.

Response -

In lieu of re-vegetation, XTO Energy asks the division to allow interim reclamation to pre-existing conditions - an operational production pad. Interim reclamation of the sump area shall consist of reclaiming the sump area to pre-existing production pad conditions by backfilling with dense clay and topping with 6-inches of caliche to match existing production pad grade. Re-vegetation shall occur during the plugging and abandonment of Nash Unit#29 per agreement with BLM (see Appendix SSI-5).

J. Closure notice.

(1) The operator shall notify the surface owner by certified mail, return receipt requested, that the operator plans to close a temporary pit, a permanent pit, a below-grade tank or where the operator has approval for on-site closure. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.

Response -

XTO Energy shall notify the surface owner by certified mail, return receipt requested, that XTO Energy plans to close a modular impoundment.

(2) The operator of a temporary pit or below-grade tank or an operator who is approved for on-site closure shall notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range. If the closure is associated with a particular well, then the notice shall also include the well's name, number and API number. Response —

XTO Energy shall notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range.

K. Closure report.

Within 60 days of closure completion, the operator shall submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable. In the closure report, the operator shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.

Response -

Within 60 days, XTO Energy shall submit a closure report on form C-144, with necessary attachments documenting all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling the sump area, capping and covering back to pre-existing conditions. In the closure report, XTO Energy shall certify that all information in the report and attachments are correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. XTO Energy shall provide a plat of the pit location on form C-105 within 60 days of closing the modular impoundment.

Appendix SSI-1Site Visit Photographs



Photo-montage of Nash Unit #29 location looking south from a small rise. Temporary pit will lie on east (left) of the pad.

East portion of photo-montage Topography is very flat and site inspections found no evidence of a continuously-flowing arroyo on southeast portion of pad.



Photograph showing sign in compliance with NMOCD Rules.



Appendix SSI-2

- > Canadian Patent
- Beck Engineering Letter
- Geotextile Specifications
- Liner Specifications



Office de la propriété intellectuelle du Canada

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Canadlan Intellectual Property Office

An Agency of Industry Canada

Brevet canadien / Canadian Patent

Le commissaire aux brevets a reçu une demande de délivrance de brevet visant une invention. Ladite requête satisfait aux exigences de la Loi sur les brevets. Le titre et la description de l'invention figurent dans le mémoire descriptif, dont une copie fait partie intégrante du présent document.

Le présent brevet confère à son titulaire et à ses représentants légaux, pour une période expirant vingt ans à compter de la date du dépôt de la demande au Canada, le droit, la faculté et le privilège exclusif de fabriquer, construire, exploiter et vendre à d'autres, pour qu'ils l'exploitent, l'objet de l'invention, sauf jugement en l'espèce rendu par un tribunal compétent, et sous réserve du paiement des taxes périodiques.

* The Commissioner of Patents has received a petition for the grant of a patent for an invention. The requirements of the Patent Act have been complied with. The title and a description of the invention are contained in the specification, a copy of which

forms an integral part of this document. The present patent grants to its owner and to the legal representatives of its owner, for a term which expires twenty years from the filing date of the application in Canada, the exclusive right, privilege and libetty of making, constructing and using the invention and selling it to others to be used, subject to adjudication before any

court of competent jurisdiction, and subject to the payment of maintenance fees.

BREVET CANADIEN

2,692,016

CANADIAN PATENT

Date à laquelle le brevet a été accordé et délivré

Date du dépôt de la demande

Date à laquelle la demande est devenue accessible au public pour consultation

2011/07/19

2010/02/05

2010/07/05

Date on which the patent was granted and issued

Filing date of the application

Date on which the application was made available for public inspection

Commissaire aux brevets / Commissioner of Patents







Office de la Propriété Intellectuelle du Canada

Un organisme d'Industrie Canada Canadian Intellectual Property Office An agency of

Industry Canada

CA 2692016 C 2011/07/19

(11)(21) 2 692 016

(12) BREVET CANADIEN CANADIAN PATENT

(13) **C**

(22) Date de dépôt/Filing Date: 2010/02/05

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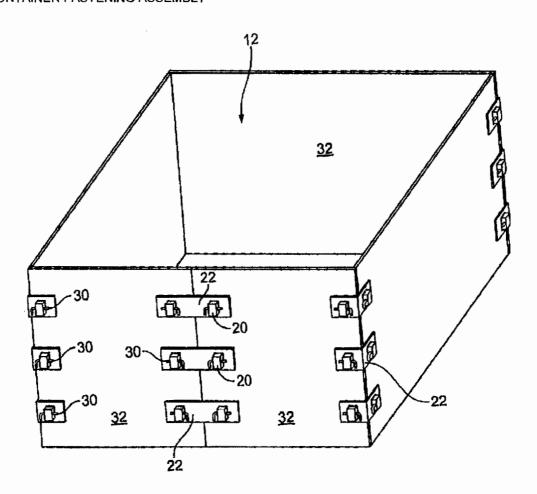
(51) Cl.Int./Int.Cl. *B65D 5/42* (2006.01), *B65D 5/44* (2006.01)

(72) Inventeur/Inventor: WIEBE, CLIFF, CA

(73) Propriétaire/Owner: OPEN RANGE ENERGY CORP., CA

(74) Agent: PERLEY-ROBERTSON, HILL & MCDOUGALL LLP

(54) Titre: ENSEMBLE DE FIXATION DE RECIPIENTS (54) Title: CONTAINER FASTENING ASSEMBLY



(57) Abrégé/Abstract:

A connection arrangement for connection of vertically and/or horizontally arranged containers. Each of the containers provides bosses or projections over a collinear pair of which is placed a separate plate. The plate provides matched polygonal apertures to





CA 2692016 C 2011/07/19

(11)(21) 2 692 016

(13) **C**

(57) Abrégé(suite)/Abstract(continued):

receive the projections. Each of the projections provides an aperture there through to receive a retainer pin or bolt, the pin or bolt abuts the plate when engaged. The arrangement greatly expedites the separation of the containers when desired. The user need only tap out the retainer pin and pull off the plate. This obviates the use of fasteners which can freeze, rust or become otherwise inoperative or cumbersome.

CONTAINER FASTENING ASSEMBLY

TECHNICAL FIELD

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The present invention relates to fasteners for modular containers/enclosures and more particularly, the present invention relate to a fastening assembly which is expeditiously removed and assembled to allow separation and assembly of the containers by the user without the need to unfasten bolts etc.

BACKGROUND OF THE INVENTION

Fastening assemblies of a broad variety have been used for some time in connecting modular containers and panels or segments making up the enclosures or containers. Contributory to the problem with the fastening arrangements known is that they are not designed for simplicity of use and with the least number of parts. It is well known that the nut and bolt or other mechanical arrangements are very often overly complex for the purpose of securing containers together. In the bolt system, the user is often faced with rusted connectors which are difficult if not impossible sometimes to disconnect. This often leads to complete destruction of the fastener and potential damage to the container which elevates costs for wasted time, materials and repairs.

As a further problem, the possibility of attempting to remove nuts from bolts etc. in inclement weather such as freezing weather becomes exceedingly difficult considering the clothing the user must wear to stay warm. The result is that the user often must at least remove hand protection to operate a wrench etc., thus introducing the possibility of frostbite or other exposure.

The prior art is replete with as many variations of fastening systems, all of which are not designed for user ease.

SUMMARY OF THE INVENTION

One object of the invention is to provide an improved fastening assembly for fastening adjacent containers.

A further object of one embodiment is to provide a connection assembly for connecting similar containers, comprising, in combination:

a first container and a second container in contact:

first cooperating engagement means projecting from each container of the containers, the first cooperating engagement means being in alignment on containers in contact;

second cooperating engagement means adapted for overlying releasable engagement with the first cooperating engagement means, the second cooperating means having a configuration matched in shape to the first cooperating engagement means, the first cooperating engagement means extending beyond the second cooperating engagement means when the second cooperating engagement means overlies the first cooperating engagement means;

third cooperating engagement means integral with the first cooperating engagement means; and

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fourth cooperating engagement means adapted for releasable engagement with the third cooperating engagement means and for retaining the second cooperating engagement means when overlying the first cooperating engagement means, whereby when the first cooperating engagement means receives the second cooperating engagement means and the third cooperating engagement means receives the fourth cooperating engagement means, each container is connected and secured against substantial vertical and horizontal separation.

The arrangement has been found to be particularly simple to use in any weather conditions. The first cooperating engagement means in one embodiment comprises a polygonal boss or projection extending outwardly from each adjacently positioned container.

The second cooperating engagement means comprises, in one embodiment, a plate adapted to overly the bosses. The plate is provided with apertures matched in configuration to the bosses. It is preferred that the shape of the bosses and the plate apertures be selected from a polygonal repertoire; circular arrangements do not provide any protection for horizontal and/or vertical movement between adjacent containers. The polygonal shape is advantageous to avoid such potentially hazardous and damaging movement. Further, the distance between the bosses of contacted containers is identical to a vertical distance between the bosses of an individual container.

The bosses are horizontally and vertically collinear to allow any plate to be used over any projections.

With respect to the fourth cooperating engagement means, the same may comprise in one possible embodiment, a pin or L bolt which is simply inserted in to the aperture extending through each boss.

The arrangement is particularly convenient, since a user wishing to disconnect connected containers, simply pushes out the pin from each boss and pulls the plate free of the bosses.

A further object of one embodiment of the present invention is to provide a connection assembly for connecting similar containers, comprising, in combination:

a first container and a second container in contact;

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a plurality of projections projecting from each container of the containers arranged in alignment on containers in contact;

a separate plate member adapted for overlying releasable engagement with the projections projecting from each container, the plate having apertures matched in shape to the projections, the projections extending beyond the plate when in overlying relation with the projections;

aperture means extending through the projections; and

retainer means adapted for releasable engagement with the aperture means, whereby when the projections receive the separate plate and the aperture means receives the retainer means, each container is connected and secured against substantial vertical and horizontal separation.

Yet another object of one embodiment of the present invention is to provide a modular container, comprising:

a plurality of separate container wall segments adapted for releasable connection with each other to form a container or enclosure:

first cooperating engagement means projecting from each container wall segment of the containers, the first cooperating engagement means being in alignment on each container wall segment;

second cooperating engagement means adapted for overlying releasable engagement with the first cooperating engagement means, the second cooperating

means having a configuration matched in shape to the first cooperating engagement means, the first cooperating engagement means extending beyond the second cooperating engagement means when the second cooperating engagement means overlies the first cooperating engagement means;

third cooperating engagement means integral with the first cooperating engagement means; and

fourth cooperating engagement means adapted for releasable engagement with the third cooperating engagement means and for retaining the second cooperating engagement means when overlying the first cooperating engagement means, whereby when the first cooperating engagement means receives the second cooperating engagement means and the third cooperating engagement means receives the fourth cooperating engagement means, each container wall segment is connected forming a container or enclosure and secured against substantial vertical and horizontal separation.

Advantageously, the use of the cooperating engagement means significantly reduces the time required to assemble and disassemble the enclosure or container and presents a marked benefit over existing arrangements.

BRIEF DESCRIPTION OF THE DRAWINGS

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Figure 1 is a perspective view of the container arrangement and fastening 20 assembly according to one embodiment;

Figure 2 is an enlarged view of the assembly illustrated in Figure 1;

Figure 3 is an enlarged view of Figure 2;

Figure 4 is a section along line 4-4 of Figure 3;

Figures 5A through 5D illustrate alternate embodiments of Figure 3;

Figure 6 is an illustration of an alternate embodiment of the present invention; and

Figure 7 is an illustration of yet another alternate embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

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Referring now to Figure 1, shown is a perspective view of a first embodiment of the present invention. Numeral 10, generally refers to the arrangement. Large containers 12 for storage of, for example, water are desirably connected together for modulation at a site. The overall fastening assembly is referenced by numeral 14 and is more detailed in Figure 2.

Each container 12 is positioned for contact with an adjacent container 12 at an interface 16. A wall or extension 18 is provided on each container 12 for abutment with a similar component from the adjacent container 12. Each wall 18 includes a plurality of projecting bosses 20 extending outwardly in parallel planar relation from wall 18. The bosses 20 function as a first cooperating engagement. The bosses 20 may be welded to the walls 18. The bosses 20 on an individual container 12 are arranged in collinear equidistant relation and are horizontally aligned when walls 18 are abutted between containers 12. The horizontal distance between bosses 20 of adjacent containers, in this embodiment is the same and this is true of the spacing of bosses on an individual container 12.

With reference to Figure 3, shown is an enlarged view of the arrangement. The bosses 20, shown in the example as having a rectangular shape, receive, in overlying relation, a second releasable cooperating engagement member 22. The member 22 is shown in the example as a plate. The plate 22 has spaced apart apertures 24 which receive the bosses 20. The boss 20 shape and aperture 24 are configured for cooperation.

Plate 22 may comprise a similar material of which the containers 12 are made, such as steel. The plate 22 is dimensioned to overlie the interface of abutment, referenced by numeral 16, of the adjacent containers 12. The plate is also dimensioned to be of a lesser thickness than the height of the bosses 20. In this manner, the plate 22 can be loosely retained on the bosses 20 in a parallel plane to the walls 18.

In order to further assist in retaining the plate 22 on the bosses 20, a third releasably engageable cooperating means in the form of an aperture 28 (chain line) cooperates with a fourth releasably engageable cooperating means in the form of, for example, a pin or L-bolt 30. As is illustrated in the example, the pin 30 is received within the aperture

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28. The reception is such that the pin 30 abuts the surface of the plate 22. This relationship ensures that the plate 22 remains snugly against the walls 18. The former relationship is depicted in Figure 4.

The Figures illustrate the boss 20 shape as a rectangle. This is useful when combined with a keyed or matched configuration in the plate 22 to reduce if not eliminate any vertical or horizontal movement of connected containers. Any suitable polygonal shape is envisioned as a possibility. Figures 5A through 5D illustrate a number of variations for the plate 22 in terms of the apertures 24 being diamond, square, hexagonal and generally square in shape. The bosses 20 would obviously have a keyed shape for cooperation. In addition, Figures 5A through 5D show variations on the shape and disposition of the pins or L bolts 30. The pins or bolts may be inserted into the aperture 28 of the bosses 20 vertically, horizontally or angularly. Further, the pins may be of a varying dimension, i.e. conical, straight, or bent. As a further variation, the plate 22 may comprise any suitable shape variations of which are shown in Figures 5C and 5D with a generally dumbbell configuration. Other variations will be appreciated by those skilled.

Referring now to Figure 6, shown is another alternate embodiment of the present invention.

In this embodiment, two bosses 20, a pair from each container 12 are connected by a modified plate 22'. In this embodiment, two plates are joined by joining members 32, shown in the example to be vertical arms. Any suitable configuration to achieve this end is possible and will be appreciated by those skilled. Further, any number of bosses 20 may be connected.

Referring now to Figure 7, shown is a further variation of the present invention. In this embodiment, the container 12 is formed of a plurality of individual wall segments 32. Each segment includes the bosses 20 which cooperate with an adjacent segment 32 in a manner similar to that discussed with respect to the previous embodiments. Plate 22 joins the adjacent segments. Conveniently, the intersection of two segments at a corner can be easily accommodated by modifying plate 22 by a right angle bend as shown in the illustration. In situations where the angle required is acute or obtuse, the plate will be modified accordingly.

Although embodiments of the invention have been described above, it is not limited thereto and it will be apparent to those skilled in the art that numerous modifications form part of the present invention insofar as they do not depart from the spirit, nature and scope of the claimed and described invention.

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WE CLAIM:

- 1. A connection assembly for connecting similar containers, comprising, in combination:
 - a first container and a second container in contact;

boss means integral with and projecting outwardly from an extension wall of each said container of said containers, said boss means being in horizontal alignment on containers to be connected;

a second cooperating engagement member for overlying releasable engagement with at least a pair of said boss means of containers to be connected, said second cooperating engagement member being independent of each said container, said second cooperating member having a configuration matched in shape to said boss means, said boss means extending beyond said second cooperating engagement member when said second cooperating engagement member overlies said boss means, said second cooperating engagement member when engaged with said boss means overlies a contact interface of connected containers;

third cooperating engagement means integral with said boss means; and

fourth cooperating engagement means adapted for releasable engagement with said third cooperating engagement means and for retaining said second cooperating engagement member when overlying said boss means, connection between containers being effected solely when said boss means receives said second cooperating engagement member and said third cooperating engagement means receives said fourth cooperating engagement means, each said container is connected and secured against substantial vertical and horizontal separation.

- 2. The combination as set forth in claim 1, wherein said second cooperating engagement member is separate and unconnected to each said container.
- The combination as set forth in claim 1, wherein each container has a plurality of projecting boss means in vertical spaced relation.
- 4. The combination as set forth in claim 3, wherein said projecting boss means are in collinear arrangement.
- 5. The combination as set forth in claim 1, wherein said boss means of said first container and said second container are in a collinear arrangement.
- 6. The combination as set forth in claim 2, wherein said second cooperating engagement member comprises a removable plate.
- 7. The combination as set forth in claim 1, wherein a horizontal distance between said boss means between contacted containers is identical to a vertical distance between said boss means of an individual container of said first container and said second container.
- 8. The combination as set forth in claim 1, wherein at least a boss means between adjacent containers is connected.
- 9. The combination as set forth in claim 1, wherein said third cooperating engagement means comprises an aperture extending through said boss means.
- 10. The combination as set forth in claim 1, wherein said fourth cooperating engagement means comprises a separate member unconnected to said container.
- 11. The combination as set forth in claim 10, wherein said fourth cooperating engagement means comprises an L-shaped pin releasably connectable within said third cooperating engagement means.
- 12. The combination as set forth in claim 1, wherein said fourth cooperating engagement means, when engaged with said third cooperating engagement means, abuts said second cooperating engagement member.

- 13. The combination as set forth in claim 1, wherein said first container and said second container are arranged in horizontal disposition.
- 14. The combination as set forth in claim 1, wherein said first container and said second container are arranged in vertical disposition.
- 15. The combination as set forth in claim 1, wherein said boss means and said second cooperating engagement member have matched polygonal shapes.
- 16. A connection assembly for connecting similar containers, comprising, in combination:
 - a first container and a second container in contact;
 - a plurality of projections projecting from the walls of each container of said containers arranged in alignment on containers in contact;
 - a separate plate member for overlying releasable engagement with said projections projecting from each container, said separate plate member being independent of each said container, said plate having apertures matched in shape to said projections, said projections extending beyond said plate when in overlying relation with said projections;

aperture means extending through said projections; and

retainer means adapted for releasable engagement with said aperture means, connection between containers being effected solely when said projections receive said separate plate and said aperture means receives said retainer means, each said container is connected and secured against substantial vertical and horizontal separation.

17. A modular container, comprising:

a plurality of separate container wall segments adapted for releasable connection with each other to form a container or enclosure;

boss means projecting from each said container wall segment of said containers, said boss means being in alignment on each container wall segment;

a second cooperating engagement plate for overlying releasable engagement with at least a pair of said boss means of each juxtaposed wall, said second cooperating engagement member being independent of said container wall segments, said second cooperating plate having a configuration matched in shape to said boss means, said boss means extending beyond said second cooperating engagement means when said second cooperating engagement plate overlies said boss means of juxtaposed walls;

third cooperating engagement means integral with said boss means; and

fourth cooperating engagement means adapted for releasable engagement with said third cooperating engagement means and for retaining said second cooperating engagement member when overlying said first cooperating engagement means, formation of said container being effected solely by said boss means being received in said second cooperating engagement member and when said third cooperating engagement means is received in said fourth cooperating engagement means, whereby said container or enclosure is secured against substantial vertical and horizontal separation.

- 18. The container as set forth in claim 17, wherein said plate is planar.
- 19. The container as set forth in claim 17, wherein said plate is angular.

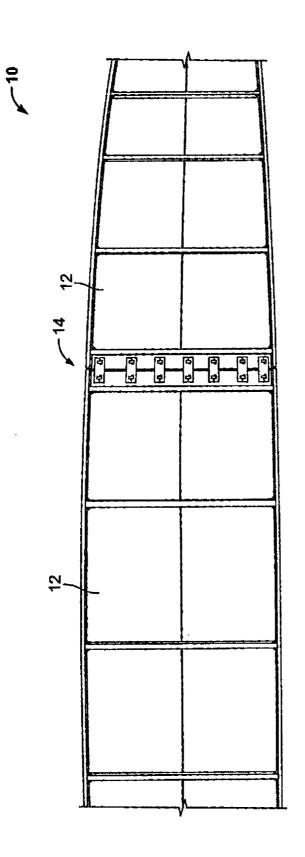


FIG. 1

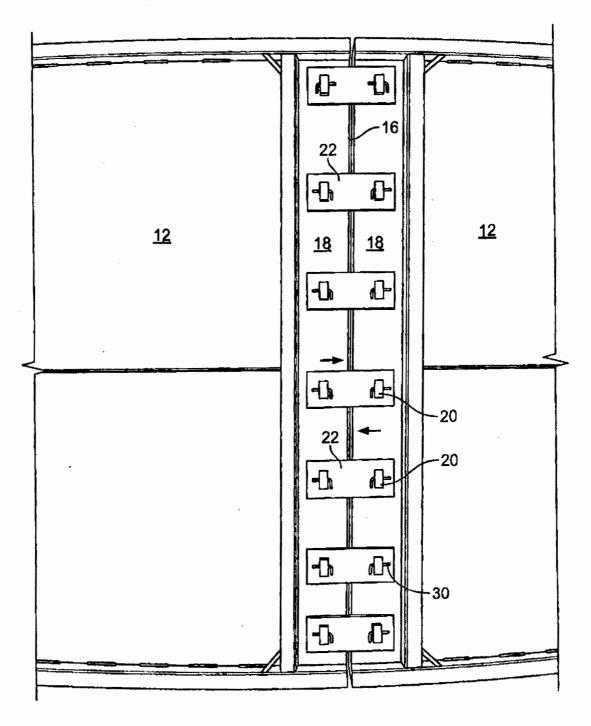
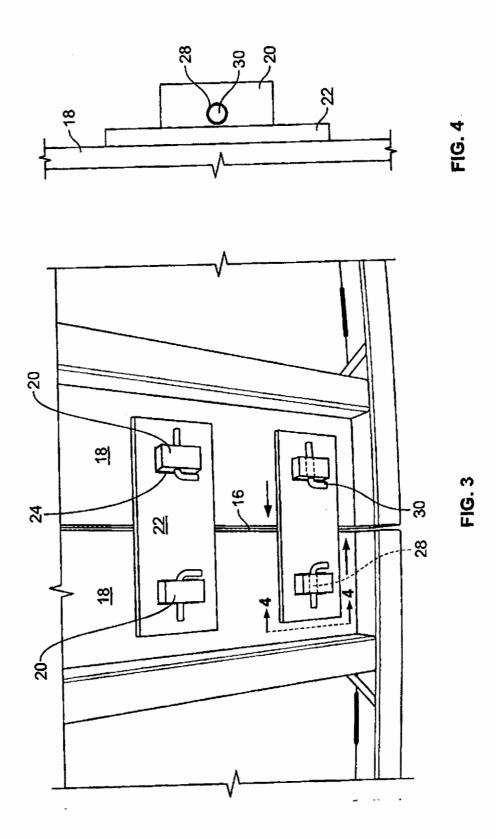
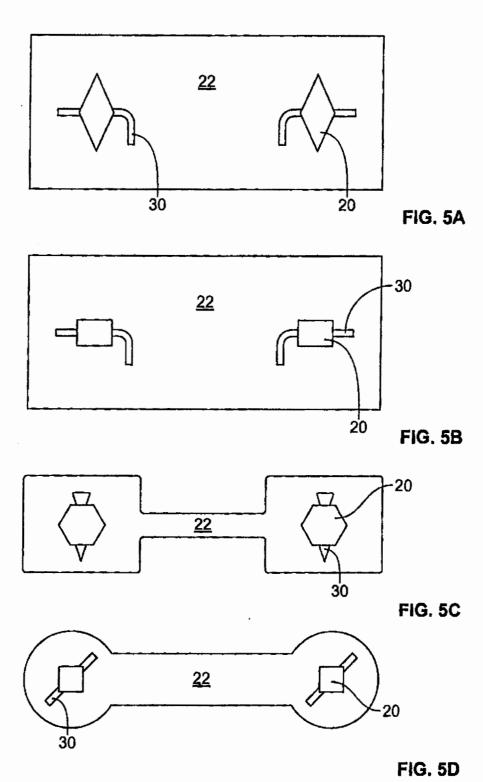
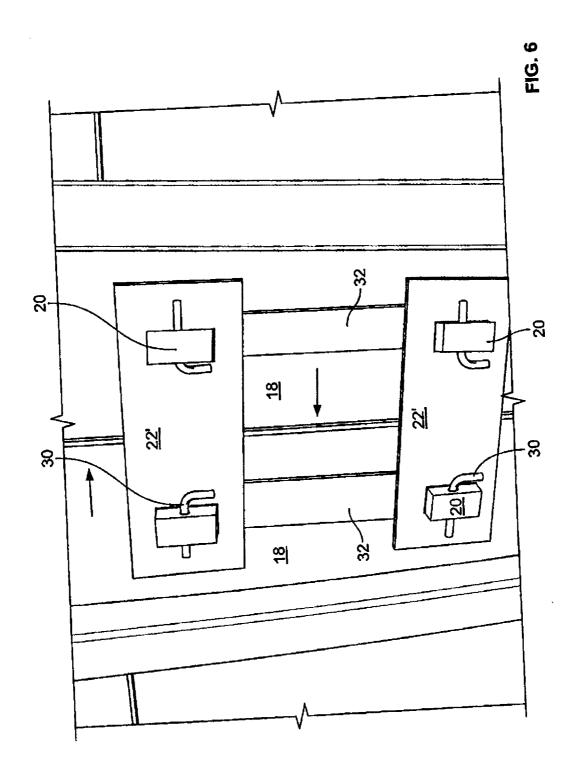


FIG. 2







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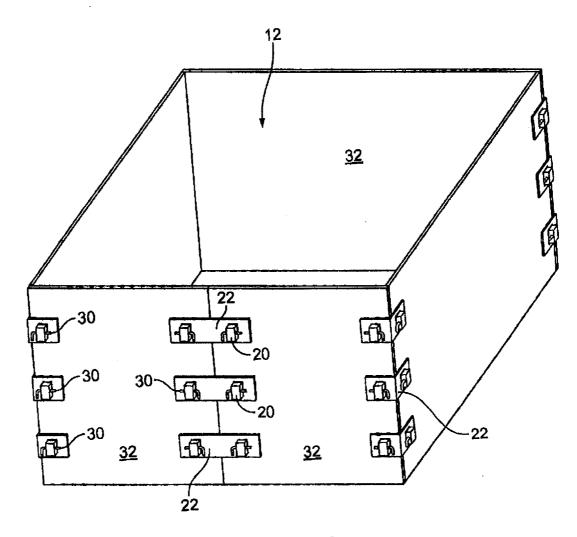


FIG. 7



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Data History Image File Wrapper Foreign Priority Select New Case Eees Supplemental Resources & Support **Bibliographic Data** Patent Information Application 12/985,362 Customer Number: -Number: Patent Guidance and General Info Codes, Rules & Manuals Filing or 371 (c) Docketed New Case -01-06-2011 Status: Date: Ready for Examination Employee & Office Directories Resources & Public Notices Application Type: Status Date: 01-26-2012 Utility Examiner Name: EDWARDS, BRETT J ELECTRONIC **Patent Searches** Location: Patent Official Gazette Group Art Unit: 3781 Location Date: Search Patents & Applications Confirmation **Earliest Publication** Search Biological Sequences US 2011-0194893 A1 4194 Number: No: Copies, Products & Services Attorney Docket **Earliest Publication** PCLP-003 08-11-2011 Number: Date: Other Class / Subclass: 206/504 Patent Number: Copyrights Trademarks First Named Issue Date of Cliff WIEBE, Calgary, (CA) Policy & Law Inventor: Patent: Reports Title of Invention: CONTAINER FASTENING ASSEMBLY

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August 26, 2011 Doc. 11341M1101

Poseidon Concepts Ltd. 1100, 645 - 7th Ave SW Calgary, Alberta T2P 4G8

Attention: To Whom It May Concern

Re: Atlantis, Poseidon & Triton Modular Tanks

This letter confirms that Beck Engineering (1992) Ltd. has designed and engineered the Poseidon Concepts modular tanks. Specifically, Beck Engineering has designed and reviewed the 6500m³ "Atlantis", the 2900m³ "Poseidon" and the 1440m³ "Triton" models.

Beck Engineering has structurally designed the tank wall panels and panel connections to fully withstand all forces and stresses that the modular tank may be subject to during transport, erection, filling and emptying the tank. Hydrostatic forces, considering a specific gravity of 1.05 have been considered during design of all components. Further, the modular tanks system has been designed to withstand the forces and stresses generated by potential out-of-plumb and out-of-round installation conditions.

The modular tanks have been designed in accordance with accepted engineering principles with reference to CSA S16 "Limit States Design of Steel Structures" as applicable. The total (von Mises) stress condition has also been considered for all components within the modular tank system including the panel connections. All stresses within the modular tank system components have been limited to ensure a minimum Factor of Safety of 3.0 has been maintained throughout the modular system. Beck Engineering has also provided signed and sealed erection procedures and ground preparation requirements.

The Poseidon, Atlantis and Triton modular tanks models are structurally designed to resist all anticipated forces on the tank panels and panel connections from the start of erection to the complete filling of the tank. The modular tank systems have been designed considering all hydrostatic forces, the associated tension developed in the wall panels and the tension forces and associated out-of-plane and out-of-plumb forces developed within the panel connections. Further consideration has been given to the forces and stresses introduced during erection considering lifting and handling and wind forces during assembly.

Beck Engineering has provided Poseidon Concepts (via Open Range Energy Corp.) with signed and sealed drawings showing all required connection details and material specifications as necessary for fabrication of the 3 modular tank models described herein.

I trust this is the information you currently require. Beck Engineering would be pleased to provide further information as necessary within the limits of our confidentiality obligations to Poseidon Concepts.

Regards,

Beck Engineering (1992) Ltd.
APEGGA Permit No. 204
Michael Hayden, P.Eng



Western Industries Inc.

PO Box 428 Yellowstone Hill Miles City, Montana 59301 (406) 234-1680 (406) 234-7774 Fax (800) 488-3592

8, 10 & 12 oz. Nonwoven Geotextile

Property				ASTM
Weight	8 oz/yd²	10 oz/yd²	12 oz/yd²	
Grab Tensile	205 lbs	250 lbs	300 lbs	D-4632
Grab Elongation	50%	50%	50%	D-4632
Trapezoidal				
Tear	80 lbs	100 lbs	115 lbs	D4533
_				
Puncture Resistance	525 lbs	625 lbs	825 lbs	D-6241
Resistance	323 103	025 108	025 108	17-02-41
UV Resistance	70% Strength	70% Strength	70% Strength	
After 500 hrs.	Retained	Retained	Retained	D-4355
		Hadaaaka		
		Hydraulic		
Apparent				
Opening Size		100 US Std.	100 US Std.	
(AOS) ³	80 US Std. Sieve	Sieve	Sieve	D-4751
Permittivity	1.5 sec ⁻¹	1.2 sec ⁻¹	1.0 sec ⁻¹	D-4491
Water Flow Rate	110 gpm/ft²	85 gpm/ft²	75 gpm/ft²	D-4491

These values are typical data and are not intended as limiting specifications.

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910 1200. Standard must be consulted for specific requirements.



OMB No. 1218-0072

Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved



IDENTITY (as Used on Label and List) GSE Low Density Polyethylene Geomembrane (LLDPE) Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

Section 1 CHEMICAL PRODUCT AND COMPANY IDE	NTIFICATION	
Manufacturer's name GSE Lining Technology	Emergency Telephone Number 1-800-435-2008 CHEMTREC (800) 424-9	300
Address (Number, Street, City, State and ZIP Code)	Telephone Number for Information 1-800-435-2008	
19103 Gundle Rd	Date Prepared 1/1/1999	
Houston, Texas 77073	Signature of Preparer (optional)	

Section2 Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))			Other Limits	
	OSHA PEL	ACGIH TLV	Recommended	% (optional)
PRODUCT NAME: LLDPE (ALL GRADES)	None	None	None	
CHEMICAL NAME:				

Polyethylene or Ethylene-Olefin Copolymer

CHEMICAL FAMILY:

Ethylene-Based Polymer

PRODUCT DESCRIPTION:

Odorless opaque white pellets or granules.

This product is not hazardous as defined in 29 CFR1910.1200

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

POTENTIAL HEALTH EFFECTS EYE CONTACT: Particulates may scratch eye surfaces/cause mechanical irritation.

SKIN CONTACT:

Negligible hazard at ambient temperatures (-18 to +38 degrees C; 0 to 100

Exposure to hot material may cause thermal burns.

INHALATION:

Negligible hazard at ambient temperature (-18 to 38 Deg C; 0 to 100 Deg F)

Vapors and/or aerosols which may be formed at elevated temperatures may

be irritating to eyes and respiratory tract.

INGESTION:

Minimal toxicity.

Section 4 FIRST AID MEASURES

EYE CONTACT:

This product is an inert solid. If in eye, remove as one would any foreign object.

SKIN CONTACT:

For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention. No attempt should be made to remove material from skin or to remove contaminated clothing, as the damaged flesh can be easily torn.

INHALATION:

In case of adverse exposure to vapors and/or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:

First aid is normally not required.

Liner

Product Description

The Liner geomembranes are economical lining materials made from blended/reprocessed resins selected for optimum performance at the lowest cost. Products are intended for use in gomembrane applications such as oil and gas reserve pits, temporary containment of frac water, backflow water high in salt concentration, seepage control, water containment and short-term protective covers. Prefabricated liners are also ideal for installation by contractors, owners, or agricultural operators.

Technical Data

Materials information is below.

Installation

Liner is flexible enough to be prefabricated at our facility into large panels (Up to 27,000 square feet at 30 mil). The prefabricated panel is accordion folded, rolled on a core, and delivered to the job site secured to a pallet. Prefabricated panels can often cover a small project with a single panel. Local labor forces are used to unroll and unfold the panels. Our entire primary field welding of liner is based on hot wedge welding technology. Field wedge welding Liner provides strong seams, and fast installations on large projects. Small welds and repairs can be completed with the Layfield Enviro Liner® welding kit.

9. Material Properties

19 Nov 2011	Series Typical Properties				
Style	ASTM	20 mil	30 mil	40 mil	
Thickness (Nominal)	D5199	20 mil 0.50 m m	30 mil 0.75 mm	40 mil 1.0 mm	
Tensile Strength at Break	D638	75 ppi 13.8 N/mm	114 ppi 21 N/mm	154 ppi 28.5 N/mm	
Elongation	D638	800%	800%	800%	
Tear Resistance	D1004	11 lbs 49 N	16 lbs 71 N	22 lbs 98 N	
Puncture Resistance	D4833	30 lbs 130 N	45 lbs 200 N	60 lbs 2 7 0	
Low Temperature Impact Resistance	D1790	-40°F -40°C	-40°F -40°C	-40°F -40°C	
Dimensional Stability	D1204 Max Chng	<2.0%	<2.0%	<2.0%	

10. Shop Seam Strengths

- or one p death out ongthe				
19 Nov 2011	Shop Seam Strengths			
Style	ASTM	20 mil	30 mil	40 mil
Heat Bonded Seam Strength	D6392 25.4 mm (1") Strip	25 ppi 4.4 N/mm	36 ppi 6.3 N/mm	48 ppi 8.4 N/mm
Heat Bonded Peel Adhesion Strength	D6392 25.4 mm (1") Strip	FTB 18 ppi 3.2 N/mm	FTB 29 ppi 5.1 N/mm	FTB 39 ppi 6.8 N/mm



GSE 30 mil UltraFlex Smooth Geomembrane (Nominal)

GSE 30 mil UltraFlex is a smooth linear low density polyethylene (LLDPE) geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require increased flexibility and elongation properties where differential or localized subgrade settlements may occur such as in a landfill closure application.

Product Specifications

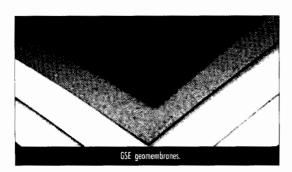
TESTED PROPERTY	TEST METHOD	PREQUENCY	NOMINAL VALUE 30 mil
Thickness, (Nominal) mil (mm) with a tolerance +/- 10%	ASTM D 5199	every roll	27 (0.68)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.92
Tensile Properties (each direction) Strength at Break, lb/in-width (N/mm) Elongation at Break, %	ASTM D 6693, Type IV Dumbell, 2 ipm G.L. 2.0 in (51 mm)	20,000 lb	114 (20) 800
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	16 (70)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	42 (190)
Carbon Black Content ⁽¹⁾ , % (Range)	ASTM D 1603*/4218	20,000 lb	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note ⁽¹⁾
Oxidative Induction Time, min	ASTM D 3895, 200° C; O ₂ . 1 atm	200,000 lb	>140
	Typical roll	DIMENSIONS	
Roll Length ⁽²⁾ , ft (m)	A productive description of the first of the second		1,120 (341)
Roll Width ⁽²⁾ , ft (m)		The state of the s	22.5 (6.9)
Roll Area, ft ² (m ²)			25,200 (2,341)

NOTES

- ⁴¹Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3
- * (2)Roll lengths and widths have a tolerance of £ 1%.
- GSE UltraFlex is available in rolls weighing approximately 3,900 lb (1,769 kg).
- All GSE geomembranes have dimensional stability of £2% when tested according to ASTM D 1204 and LTB of <-77° C when tested according to ASTM D 746.
- *Modified.

OTDSUF R02/15/10

Chemical Resistance for Geomembrane Products



GSE geomembranes are made of high quality, virgin polyethylene which demonstrates excellent chemical resistance. GSE polyethylene geomembranes are resistant to a great number and combinations of chemicals. It is this property of (HDPE) high density polyethylene geomembranes that makes it the lining material of choice.

In order to gauge the durability of a material in contact with a chemical mixture, testing is required in which the material is exposed to the chemical environment in question. Chemical resistance testing is a very large and complex topic because of two factors. First, the number of specific media is virtually endless and second, there are many criteria such as tensile strength, hardness, etc. that may be used to assess a material's resistance to degradation.

The chemical resistance of polyethylene has been investigated by many people over the past few decades. We are able to draw from that work when making statements about the chemical resistance of today's polyethylene geomembranes. In addition to that, many tests have been performed that specifically use geomembranes and certain chemical mixtures. Naturally, however, every mixture of chemicals cannot be tested for. As a result of these factors, GSE published a chemical resistance chart, demonstrating general guidelines.

Polyethylene is, for practical purposes, considered impermeable. Be aware, however, that all materials are permeable to some extent. Permeability varies with concentration, temperature, pressure and type of permeant. The rates of permeation are usually so low, however, that they are insignificant. As a point of reference, polyethylene is commonly used for packaging of several types of materials. These include gaso-

line, motor oil, household cleaners (i.e. bleach), muratic acid, pesticides, insecticides, fungicides, and other highly concentrated chemicals. Also, you should be aware that there are some chemicals which may be absorbed by the material but only when present at very high concentrations. These include halogenated and/or aromatic hydrocarbons at greater than 50%; their absorption results in swelling and slight changes in physical properties such as increased tensile elongations. This includes many types of fuels and oils. Recognize that this action, however, does not affect the liner's ability to act as a barrier for the material it is containing.

Since polyethylene is a petroleum product, it can absorb other petroleum products. Like a sponge, the material becomes slightly thicker and more flexible but does not produce a hole or void. However, unlike a sponge, this absorption is not immediate. It takes a much longer time for a polyethylene liner to swell than it does for a sponge. The exact time it takes for swelling to occur depends on the particular constituents and concentrations of the contained media. However, a hole would not be produced. Also, this absorption is reversible and the material will essentially return to it's original state when the chemical is no longer in contact with the liner.

With regard to typical municipal landfills in the United States, legally allowable levels of chemicals have been demonstrated to have no adverse affect on polyethylene geomembrane performance. The very low levels of salts, metals and organic compounds do not damage polyethylene. A double-lined containment with a leachate (leak detection) removal system effectively prevents any significant, continuous exposure of the secondary membrane to these materials and for practical purposes makes the total liner system even more impermeable.



The Pioneer Of Geosynthetics

Chemical Resistance Chart

GSE is the world's leading supplier of high quality, polyethylene geomembranes. GSE polyethylene geomembranes are resistant to a great number and combinations of chemicals. Note that the effect of chemicals on any material is influenced by a number of variable factors such as temperature, concentration, exposed area and duration. Many tests have been performed that use geomembranes and certain specific chemical mixtures. Naturally, however, every mixture of chemicals cannot be tested for, and various criteria may be used to judge performance. Reported performance ratings may not apply to all applications of a given material in the same chemical. Therefore, these ratings are offered as a guide only.

			ance at:
Medium	Concentration	20° C (68° F)	60° C (140° F)
		(00 Г)	(140 г)
A Acetic acid	100%	S	L
Acetic acid	10%	S	S
Acetic acid anhydride	100%	Š	Ĺ
Acetone	100%	Ĺ	Ĺ
Adipic acid	sat. sol.	Š	Š
Allyl alcohol	96%	Š	Š
Aluminum chloride	sat. sol.	Š	š
Aluminum fluoride	sat. sol.	$\tilde{\mathbf{s}}$	$\tilde{\mathbf{s}}$
Aluminum sulfate	sat. sol.	$\tilde{\mathbf{s}}$	Š
Alum	sol.	Š	Š
Ammonia, aqueous	dil. sol.	S	S
Ammonia, gaseous dry	100%	S	S
Ammonia, liquid	100%	S	S
Ammonium chloride	sat. sol.	S	S
Ammonium fluoride	sol.	S	S
Ammonium nitrate	sat. sol.	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	S S S S S S S S S S S S S S S S S S S
Ammonium sulfate	sat. sol.	S	S
Ammonium sulfide	sol.	S	
Amyl acetate	100%	S	L
Amyl alcohol	100%	S	L
Aniline	100%	S	L
Antimony trichloride	90%	S	Ş
Arsenic acid	sat. sol.	S	S
Aqua regia	HCI-HNO3	U	U
3			
Barium carbonate	sat. sol.	S	S
Barium chloride	sat. sol.	S	S
Barium hydroxide	sat. sol.	S	Š
Barium sulfate	sat. sol.	S	S
Barium sulfide	sol.	S	Ş
Benzaldehyde	100%	S	L
Benzene		L	L S
Benzoic acid	sat. sol.	S S	S S
Beer Baray (andium tatroharata)	ent col	S	S
Borax (sodium tetraborate) Boric acid	sat. sol. sat. sol.	S	S
Bromine, gaseous dry	100%	s U	S U
Bromine, gaseous dry	100%	Ü	Ü
Butane, gaseous	100%	Š	Š
l-Butanol	100%	Š	S
Butyric acid	100%	S S	L
C	100/0		2
Calcium carbonate	sat. sol.	S	S
Calcium caloonate	sat. sol.	Š	š
Calcium chloride	sat. sol.	Š	S S S
Calcium nitrate	sat. sol.	S S S	š
Calcium sulfate	sat. sol.	$\tilde{\mathbf{s}}$	š
Calcium sulfide	dil. sol.	Ľ	Ľ
Carbon dioxide, gaseous dr		Š	Š
Carbon disulfide	100%	L	Ũ
Carbon monoxide	100%	s	S
Chloracetic acid	sol.	Š	S
Carbon tetrachloride	100%	Ĺ	Ũ
Chlorine, aqueous solution	sat. sol.	L	U
Chlorine, gaseous dry	100%	L	Ü
Chloroform	100%	U	Ü
Chromic acid	20%	S	L
Chromic acid	50%	S S	L
Citric acid	sat. sol.	S	S

			ance at:	-
Medium	Concentration	20° C (68° F)	60° C (140° F)	
Copper chloride	sat. sol.	S	S	-
Copper nitrate	sat. sol.	S	S	
Copper sulfate	sat. sol.	S	Š	
Cresylic acid	sat. sol.	L	_	
Cyclohexanol	100%	S	S	
Cyclohexanone	100%	S	L	
D				
Decahydronaphthalene	100%	S	L	
Dextrine	sol.	S	S	
Diethyl ether	100%	L	_	
Dioctylphthalate	100%	S	Ĺ	
Dioxane	100%	S	S	
E	1000/	6		
Ethanediol	100%	S	S	
Ethanol	40%	S	L	
Ethyl acetate	100%	S	U	
Ethylene trichloride	100%	U	U	
F	ant and	c	c	
Ferric chloride	sat. sol.	S S	3	
Ferric nitrate	sol.	S	3	
Ferric sulfate	sat. sol. sat. sol.	S S	3	
Ferrous chloride Ferrous sulfate		S	\$ \$ \$ \$ \$ U	
	sat. sol. 100%	Ü	H	
Fluorine, gaseous Fluorosilicic acid	40%	Š	9	
Formaldehyde	40%	S	S S S	
Formic acid	50%	3	\$	
Formic acid	98-100%	S S	\$	
Furfuryl alcohol	100%	Š	Ĺ	
G G	10070	5	L	
Gasoline		S	L	
Glacial acetic acid	96%	š	Ĺ	
Glucose	sat. sol.	Š	Š	
Glycerine	100%	S	S S	
Glycol	sol.	š	S	
Н				
Heptane	100%	S	U	
Hydrobromic acid	50%	S	S	
Hydrobromic acid	100%	S	S	
Hydrochloric acid	10%	S	S	
Hydrochloric acid	35%	S	S	
Hydrocyanic acid Hydrofluoric acid	10%	555555555555	S S S S S L	
Hydrofluoric acid	4%	S	Ş	
Hydrofluoric acid	60%	S	L	
Hydrogen	100%	S	S	
Hydrogen peroxide Hydrogen peroxide	30%	S	L	
Hydrogen peroxide	90%	S	U	
Hydrogen sulfide, gaseous	s 100%	S	S	
Lactic acid	100%	S	S	
Lead acetate	sat. sol.	S S	_	
M	341. 301.	3		
Magnesium carbonate	sat. sol.	S	S	
Magnesium chloride	sat. sol.	S S S S S S	S S S S S S	
Magnesium hydroxide	sat. sol.	S	S	
Magnesium nitrate	sat. sol.	S	S	
Maleic acid	sat. sol.	S	S	
Mercuric chloride	sat, sol.	S	S	
Mercuric cvanide	sat. sol.	S	S	
Mercuric nitrate	sol.	S	S	

	C	20° C	ance at: 60° C
Medium	Concentration	(68° F)	(140° F)
Mercury	100%	S	S S
Methanol Mathylana ablasida	100% 100%	S L	5
Methylene chloride Milk	100%	S	S
Molasses	_	Š	Š
N		J	5
Nickel chloride	sat, sol.	S	S
Nickel nitrate	sat. sol.	S	S S S
Nickel sulfate	sat. sol.	S	S
Nicotinic acid	dil. sol.	S S S S S	_
Nitric acid	25%	S	S
Nitric acid	50%		U
Nitric acid	75%	U	U
Nitric acid	100%	U	U
Oils and Crasss		c	1
Oils and Grease	100%	S	L L
Oleic acid Orthophosphoric acid	50%	S	S
Orthophosphoric acid	95%	Š	Ĺ
Oxalic acid	sat. sol.	S S S S	Š
Oxygen	100%	Š	Ľ
Ozone	100%	L	U
P			
Petroleum (kerosene)		S	L
Phenol	sol.	S	S
Phosphorus trichloride	100%	S	L
Photographic developer	cust, conc.	S	S
Picric acid	sat. sol.	S	
Potassium bicarbonate	sat. sol.	5	2
Potassium bisulfide Potassium bromate	sol. sat. sol.	3	3
Potassium bromide	sat. sol.	S	Š
Potassium carbonate	sat. sol.	Š	Š
Potassium chlorate	sat. sol.	š	Š
Potassium chloride	sat. sol.	š	Š
Potassium chromate	sat. sol.	S	S
Potassium cyanide	sol.	S	S
Potassium dichromate	sat. sol.	S	S
Potassium ferricyanide	sat. sol.	S	S
Potassium ferrocyanide	sat. sol.	S	S
Potassium fluoride	sat. sol.	S	8
Potassium hydroxide	10%	3	5
Potassium hydroxide	sol. sol.	\$	1
Potassium hypochlorite Potassium nitrate	sat. sol.	S	S L
Potassium orthophosphate		Š	Š
Potassium perchlorate	sat. sol.	Š	š
Potassium permanganate	20%	š	š
Potassium persulfate	sat. sol.	S	Ś
Potassium sulfate	sat. sol.	555555555555555555555555555555555555555	S S S S S S S S S S S S S S S S S S S
Potassium sulfite	sol.	S	S
Propionic acid	50%	S	
Propionic acid	100%	S	L
Pyridine	100%	S	L
Quinol (Hydroquinone)	sat. sol.	S	S
Salicylic acid	sat. sol.	S	S

Resistance at:				
Medium	Concentration	20° C	60° C	
		(68° F)	(140° F)	
Silver acetate	sat. sol.	S	S	
Silver cyanide	sat. sol.	Š	S	
Silver nitrate	sat. sol.	S	Š	
Sodium benzoate	sat, sol.	Š	Š	
Sodium bicarbonate	sat. sol.	S	S	
Sodium biphosphate	sat. sol.	S	S	
Sodium bisulfite	sol.	S	S	
Sodium bromide	sat. sol.	S	S	
Sodium carbonate	sat, sol.	S	S	
Sodium chlorate	sat. sol.	S	S	
Sodium chloride	sat. sol.	S	S	
Sodium cyanide	sat. sol.	S	S	
Sodium ferricyanide	sat, sol.	S	S	
Sodium ferrocyanide	sat, sol.	S	S	
Sodium fluoride	sat. sol.	S	S	
Sodium hydroxide	40%	S	S	
Sodium hydroxide	sat. sol.	S	S	
Sodium hypochlorite	15% active chlorii	ne S	S	
Sodium nitrate	sat. sol.	S	S	
Sodium nitrite	sat. sol.	S	S	
Sodium orthophosphate	sat. sol.	S	S	
Sodium sulfate	sat. sol.	S	S	
Sodium sulfide	sat. sol.	S S S S S S S S S S S S S S S S S S S	80000000000000000000000000000000000000	
Sulfur dioxide, dry	100%	S	S	
Sulfur trioxide	100%	U	U	
Sulfuric acid	10%	S S	S S	
Sulfuric acid	50%	S	S	
Sulfuric acid	98%	S	U	
Sulfuric acid	fuming	U	U	
Sulfurous acid	30%	S	S	
<u>T</u>	_			
Tannic acid	sol.	S	S	
Tartaric acid	sol.	S	S	
Thionyl chloride	100%	L	U	
Toluene	100%	L	U	
Triethylamine	sol.	S	L	
U	aal	c		
Urea	sol.	S S	S S	
Urine W	_	3	3	
Water		S	S	
Wine vinegar		Š	Š	
Wines and liquors		Š	š	
X		Ų	5	
Xylenes	100%	L	U	
Y	10070		Ü	
Yeast	sol.	S	S	
Z	501.	J	-	
Zinc carbonate	sat. sol.	S	S	
Zinc chloride	sat, sol.	S	\$ \$ \$ \$ \$	
Zinc (II) chloride	sat. sol.	S	S	
Zinc (IV) chloride	sat. sol.	S	S	
Zinc oxide	sat. sol.	S S S S	S	
Zinc sulfate	sat. sol.	S	S	
Specific immersion testing should be undertaken to ascertain the suitability of chemicals not listed above with reference to special requirements.				

NOTES:

- (S) Satisfactory: Liner material is resistant to the given reagent at the given concentration and temperature. No mechanical or chemical degradation is observed.
- (L) Limited Application Possible: Liner material may reflect some attack. Factors such as concentration, pressure and temperature directly affect liner performance against the given media. Application, however, is possible under less severe conditions, e.g. lower concentration, secondary containment, additional liner protections, etc.
- (U) Unsatisfactory: Liner material is not resistant to the given reagent at the given concentration and temperature. Mechanical and/or chemical degradation is observed.
- (-) Not tested
- sat. sol. = Saturated aqueous solution, prepared at 20°C (68°F)
- sol. = aqueous solution with concentration above 10% but below saturation level
- dil. sol. = diluted aqueous solution with concentration below 10%
- cust. conc. = customary service concentration

Appendix SSI-3

> Atlantis system set-up procedures

```
Steps for setting a tank
        Prejob checklist
Get site info
Company rep name
Check site for level and ground material make-up
Where are tank and accessories coming from, who is shipping?
        Inventory needed on site day of tank install
               Geo
               Liner
               Tank walls
               Piping (and all bolts, washers, nuts required)
               Ladders w/ fall arrestors
               Plate stands with plates, pins and safety pins
               Clamps
       Tools needed
               Trackhoe with operator
               Boom truck or crane capable of reaching 7000 lbs at least 50 feet with operator
                        **On sites where acceptable - a 12,000 lb. telehandler with proper jig may be substituted for
                       the crane/boom truck, (manbasket also recommended)
               Genie boom - min. 30 foot reach
               Laser level – for checking ground work prior to tank setup
               Wrenches for tightening plumbing
               Impact wrench for tightening clamps more quickly
               Wrecking bar for prying/moving plates
               Crowfoot bar for prying plates inserting pins
               Heavy duty liner bar at least 80 gauge probably 120 gauge steel pipe
               Marking paint and dispenser
               300' tape measure
               Set of four 20 foot long, min. 8,000 lb. capacity two straps for pulling out liner.
```

Poseidon Concepts

Tank setting Procedures

Use proper safety procedures for all steps. Hoisted loads must have tag lines, genie operators will be harnessed properly and anchored, and all required PPE will be worn at all times.

- Check pad for rocks, sharp objects, irregularities, proper suction pits.
 - O Suction pits should be deeper in the center than toward the edge of the tank. This will prevent air from being trapped and the suction box floating.
 - O Y-trenches should be no less than 8" and nor more than 18" deep.
- Unroll geo-fabric (rough/rocky pad may require two layers of geo)
 - Overlap at least 1 foot unless using a one-piece fabricated geo
 Start on the downwind side when using single rolls
 - o Paint circle for tank walls on top of the geo

Setting liner

- o Paint stop lines to indicate how far to pull liner.
- O Set picker to boom out so you can unroll the liner with the trackhoe
- Use laborers to unfold liner to the stop lines.
- o Square the liner up, if needed.
- o Repeat procedure, if double lined.
- o Fold liner back to center to allow room to place tank walls
- Paint a circle as a top-of-wall guide for pulling liner, trim outside that line so it will hang at least two feet outside of the tank.
- o At this point it is very helpful to fill your y-trenches to weight down the liner.

Placing tank walls (with crane)

- o If using a crane or boom truck, position to start placing tank panels
- o Back truck with panels within reach of the crane or pack with the trackhoe.
- O With a 4-point hook, lift panel, swing into place.
- Picker will set panel on ground and reposition hooks to a four-point lift using the slide arms on the panels to stand upright and position it on the circle painted on the geo.
- If using a telehandler, hook up to the four inside angled pick points. Then pick and carry to desired starting point. You will need to measure and paint a center reference to make setting panels easier for the telehandler operator.
- o Trackhoe will need to use thumb to "hold" panel in place until the next panel is attached.
- Repeat steps with next panel, connect with plates, pins and safety pins. Trackhoe may release panel at this point unless high wind conditions exist, then should hold for at least three panels.
- After connecting each panel, a 3 foot wide length of geo will be placed and secured to protect the liner from the seams of the tank.
- Continue these steps until tank walls are all in place. Do not connect the last panel until liner-pulling crew has entered the tank, do not make the connections on the last seam until ladders are in place and liner pull is nearing completion.
- Connect final panel.

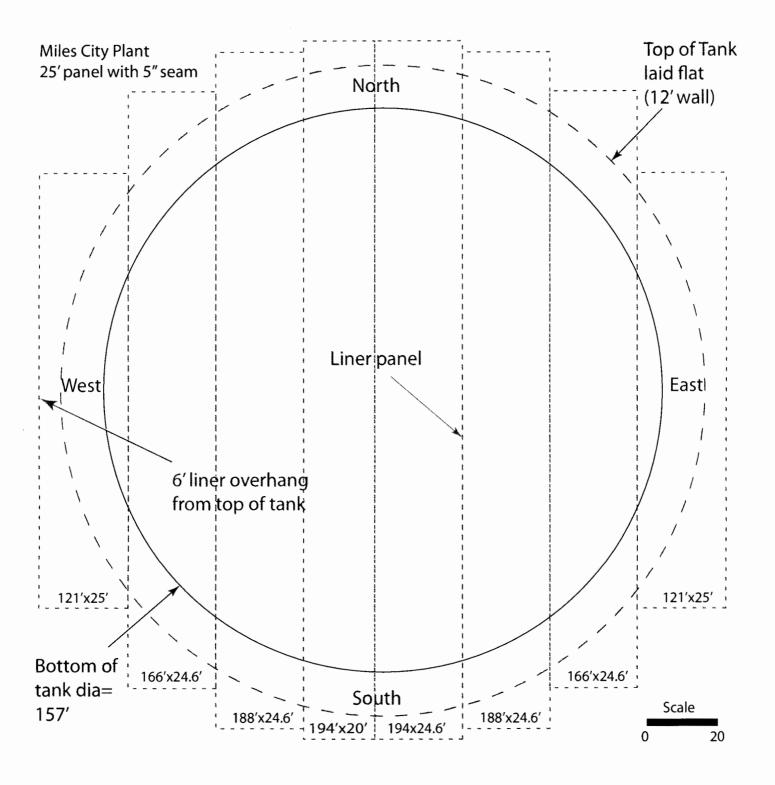
Pulling liner

Worker inside the tank straps liner, and hands to genie workers. Genie workers pull the liner so that the pull line is at the top of the wall. Worker inside tank will make sure the liner is to the wall of the tank

- along the floor. Clamp the liner in place. (It is helpful in windy situations to be filling the tank as you are pulling liner to add weight and keep the wind from blowing it out.)
- o Continue procedure until the entire liner has been pulled over the wall and secured in place.
- Clamps should be spaced and an adequate number put on the wall to minimize wind inside the tank behind the liner.
- After liner is pulled and clamped, trim excess liner 2-3 feet outside of the tank. Trackhoe should clean
 up and prevent dispersion by covering with dirt, snow, etc.
- > Assemble suction, piping and ladders and place over wall
 - Make sure all bolts, connections and clamps are securely fastened. Flexible suction needs to have TWO clamps on each end.
 - o Place filler tubes and circulating pipes around tank as needed.
 - Leave all valves open to allow air to escape.
 - Make sure sure fall arrestors are in place and functional.
- Walk outside of tank, make sure all plates are in place, pins properly secured with safety pins in place.
- Check area for garbage, debris, tools, etc..

Appendix SSI-4

Design diagram for liner seam orientation



Appendix SSI-5

> Reclamation section for BLM APD

ECIAL DRILLING STIPULATION

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

OPERATOR'S NAME STRATA PRODUCTION COMPAN	y well no. & name #29 nash unit
LOCATION 1980' F S L & 2310' F E I	L SEC. <u>13</u> , T. <u>23S</u> ., R. <u>29E</u> .
LEASE NO. NM-17589 COUNTY	EDDY STATE NEW MEXICO

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

I.	SPECIAL	ENVIRONMENT	REQUIREMENTS
----	---------	-------------	--------------

()	Lesser Prairie Chicken (Stips attached)	()	Floodplain	(St ip e	attached
()	San Simon Swale (Stips attached)	()	Other		

II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

(The BLM will monitor construction of this drill site. Notify the (Carlsbad Resource Area Office at (505) 887-6544 () Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.

($\mathcal X$ Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

() All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately _____ inches in depth. Approximately _____ cubic yards of topsoil material will be stockpiled for reclamation.

() Other

III. WELL COMPLETION REQUIREMENTS

() A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and reseeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.

- () A. Seed Mixture 1 (Loamy Site)
 Lehmanns Lovegrass (Eragrostis lehmannlana) 1.0
 Side Oats Grass (Boutelous curtipendula) 5.0
 Sand Dropseed (Sporobolus cryptandrus) 1.0
- () C. Seed Mixture J (Shallow Sites)
 Sideoats Grama (Boute curtipendula) 1.0
 Lehmanns Lovegrass (Eragrostis lenmanniana) 1.0
 or Boar Lovegrass (E. chloromalas)
- () B. Seed Mixture 2 (Sandy Sites)
 Sand Dropseed (Sporobolus cryptandrus) 1.0
 Sand Lovegrass (Eragrostis trichodes) 1.0
 Plains Bristlegrass (Setaria magrostachys) 2.0
- Alkali Sacaton (Sporobolus airoides) 1.0
 Four-Wing Saltbush (Atriplex canescens) 5.0

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

() Other

C. The reserve pit will be lined with a high quality plastic sheeting (5-7 mil thickness).

10. Plan for Restoration of the Surface:

A. Upon completion of the proposed operations, should the well be abandoned, the pit area, after allowed to dry, will be broken out and leveled. The original top soil will be returned to the entire location, and leveled and contoured to the original topography as nearly as possible.

All trash, garbage and pit lining will be removed in order to leave the location in an aesthetically pleasing condition. All pits will be filled and the location leveled within 120 days after abandonment.

- B. The disturbed area will be revegetated by reseeding during the proper growing season with a seed mixture of native grasses as recommended by the BLM.
- C. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time the rig is removed, the reserve pit will be fenced on the rig (fourth) side to prevent livestock or wildlife from being entrapped. The fencing will remain in place until the pit area is cleaned and leveled. No oil will be left on the surface of the fluid in the pit.
- D. Upon completion of the proposed operations, should the well be productive, the reserve pit area will be treated as outlined above within the same prescribed time. The caliche from an area of the original drillsite not needed for production operations or facilities will be removed and used for construction of thicker pads or firewalls for the tank battery installation. Any additional caliche required for facilities will be obtained from a BLM approved caliche pit. Topsoil removed from the drillsite will be used to recontour the pit area and unused portions of the drill pad to the original natural level and reseeded as per BLM specifications.

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

March 15, 2013

Mr. Mike Bratcher NMOCD District 2 811 South First Street Artesia, New Mexico 88210 Mr. Brad Jones NMOCD 1220 S. St. Francis Drive Santa Fe, NM

RE: Nash Draw Unit #29 modular impoundment spill report. API No: 30-015-29434

Dear Sirs:

R.T. Hicks Consultants is pleased to submit the enclosed Form C-141 Release Notification and Correction Action on the behalf of XTO Energy.

The release from the modular impoundment was brought to our attention during the submittal of the C-144 Closure Report submitted to Mr. Bratcher, via email, on December 17, 2012.

We will revise the C-144 closure report to include results of the remediation plan that is the subject of this spill report. Included in the revision, per request of Mr. Jones, will be the inclusion of the entire C-144 permit application and correction to applicable dates and signatures.

We will submit the report to Mr. Jones with a copy to Mr. Bratcher. Both submittals will be delivered via certified mail/return receipt.

If you have any questions please contact me at 970-570-9535.

Sincerely,

R.T. Hicks Consultants Durango Field Office

Andrew Parker

Cc: David Luna, XTO Energy, via email

Jennifer Van Curen, BLM - Carlsbad Field Office, via certified mail/return receipt

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 R io Brazos Road, Aztec, NM 87410
District IV

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr.

Submit 1 Copy to appropriate District Office in

1220 S. St. Fran	cis Dr., Sant	a Fe, NM 8750	5	Sa	inta Fe	, NM 875	505					
	7777		Rele	ease Notific				ction				
			1401	VII.50 1 1012111	JH CIOI	OPERA'		_	l Report	П	Final Report	
Name of Co	mpany X	TO Energy, In	nc			Contact Da		[V] IIIII	report	Щ.	1 mai Kepon	
				79701			No. 432-620-6742	2				
Address 200 N. Loreine, Suite 800 Midland, TX 79701 Facility Name Nash Unit #29								ced water modular i	mpoundment	<u> </u>		
Surface Ow	mer Clld			Mineral C								
Surface Ow	HEL BLM			Mineral	ymer			API NO	30-015-294	134		
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Was Infinedia	are Monce C		Yes X	No Not Re	equired	If YES, To	whom?	NA				
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By Whom? NA Was a Watercourse Reached? Yes X No If a Watercourse was Impacted, Describe Fully.*					If YES, Volume Impacting the Watercourse.							
						NA						
If a Watercou	rse was Im	pacted, Descr	ibe Fully.	•		J						
	NA											
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Mr. Randy Gree	en of XTO En	ergy mabilized v	vater haul tr	ucks to the site and I	or the tan lowered th	k along the we le water level to	stern eoge releasing o prevent further leal	approximately 3 barrel tage and reattached the	is of treated pr e liner to the to	oduced on of the	water, e tank The	
water was trans	ferred to Nas	h Draw 49 H an	d Nash Dra	w Unit # 57 H. Soll s	ampling w	as conducted p	per C-144 closure re	quirements. The attach	ed document p	present	s the sampling	
results and prop Describe Are			Antina Tale						******			
1		•										
								he area of impact wa				
				ilion was taken du Idment heavy mei				on of the modular in	rpoundment	along	the edge	
								nderstand that pursi	unt to NMO	\C\D\=	los and	
regulations al	l operators	are required to	o report an	d/or file certain re	elease no	e desi of my etifications ar	nd perform correc	tive actions for rele	ases which n	nav en	danger	
public health	or the envir	onment. The	acceptance	e of a C-141 repo	rt by the	NMOCD ma	arked as "Final R	eport" does not relie	eve the opera	tor of	liability	
								eat to ground water,				
				tunce of a C-141	героп ас	es not rettev	e the operator of	responsibility for co	mpliance wi	th any	other	
federal, state, or local laws and/or regulations.						OIL CONSERVATION DIVISION						
Signature:		Fred		_				×		<u>~</u>		
Signature:		ora,	1-11	u ,				• • •				
Printed Name	: David Lun	8				Approved by	Environmental S	pecialist:				
Title: Operations Engineer						Approval Date: Exp			Expiration Date:			
E-mail Addre	ss: David_L	una@xtoener	gy.com			Conditions of	Approval:					
Date: 3	1/15	/13	Phone:	432-620-6742					Attached	Ш		

^{*} Attach Additional Sheets If Necessary

Soil Chemistry

On November 13, 2012, Hicks Consultants collected two 5-point soil samples on location for closure of the modular impoundment employed for hydraulic fracturing of five wells in 2012. On February 11, 2013 Hicks Consultants performed additional characterization to determine the vertical extent of chloride in soil near the western edge of the former modular impoundment, near the area of the reported release.

The location and chloride chemistry of the samples are presented on Plate 1. The chemistry is summarized in Table 1, below. Table 2 shows the lithology of the "Trench Sample". The laboratory certificate of analysis is attached.

The point samples for the Tank Composite and BG Composite were collected approximately two inches below the caliche pad/soil interface at a depth of approximately 1-foot. The Trench Sample consisted of discrete samples at 2, 4, and 6 foot depths.

Sample ID Date Depth Chloride EC Benzene BTEX TPH GRO/DRO (ft) mg/kg uS/cm mg/kg mg/kg mg/kg mg/kg NMAC 19.15.17.13.B(1).b 500 or background 0.2 50 2,500 500 <0.49 Tank Composite 11/13/2012 1 7,500 NS ND <20 <10 **BG** Composite 11/13/2012 1 3,000 NS <0.49 ND <20 <10 Trench Sample 2/11/2013 2 3,480 8,010 NS NS NS NS NS NS NS Trench Sample 2/11/2013 4 2,120 3,020 NS Trench Sample 2/11/2013 6 2,000 7,050 NS NS NS NS

Figure 1: Summary of soil chemistry

Notes

ND = non-detect

2 NS = not sampled

Figure 2: Lithology of Trench Sample

Depth (ft)	Description						
0-1	Caliche pad						
1 - 4	op soil (loamy sand), dark brown, moist						
4 - 6	Top soil, reddish brown, moist						
6	Medim sand w/caliche, hard, brown, moist						

Note: native hard caliche was observed below 6 feet.

The Tank Composite sample with a chloride concentration of 7,500 mg/kg indicates production activities have impacted the western half of the caliche pad. The BG Composite sample has a chloride concentration comparable to the Trench Sample at the 2 foot depth (3,480 mg/kg). Soil chloride concentrations at the Trench Sample that is within the area of the Tank Composite sample show chloride concentrations are decreasing with depth, from 3,480 mg/kg at 2 feet to 2,000 mg/kg at 6 feet and indicate that the majority of chloride impairment is limited to the production pad surface.

The chemistry and lithology of the Trench Sample suggests that:

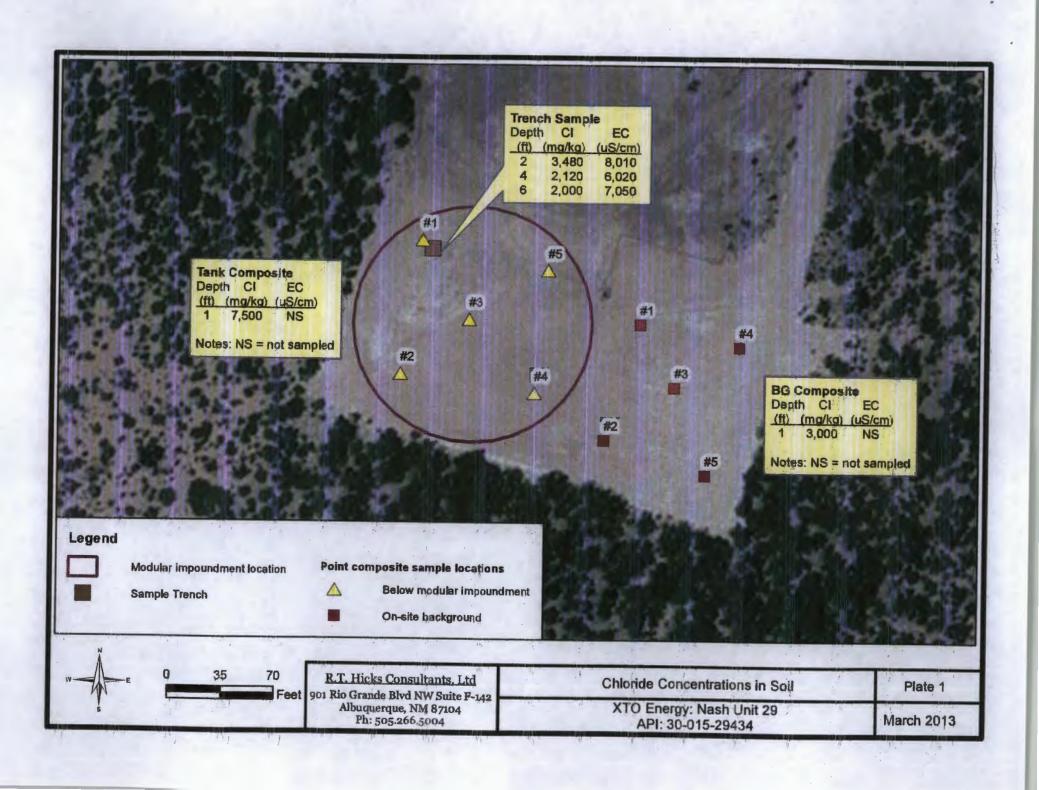
- the moist soil at a depth of 6 feet, which exhibits 2,000 mg/kg chloride, is likely impacted by shallow groundwater wicking up from the underlying brine groundwater zone,
- the moist soil near the surface (Trench Sample) is likely from recent precipitation events and past releases at the site, and
- soil at depths from 1 to 5 feet below surface have chloride and EC concentrations that will support vegetation. Re-vegetating the impacted area is included in the remediation plan and also satisfies BLM's request for interim reclamation.

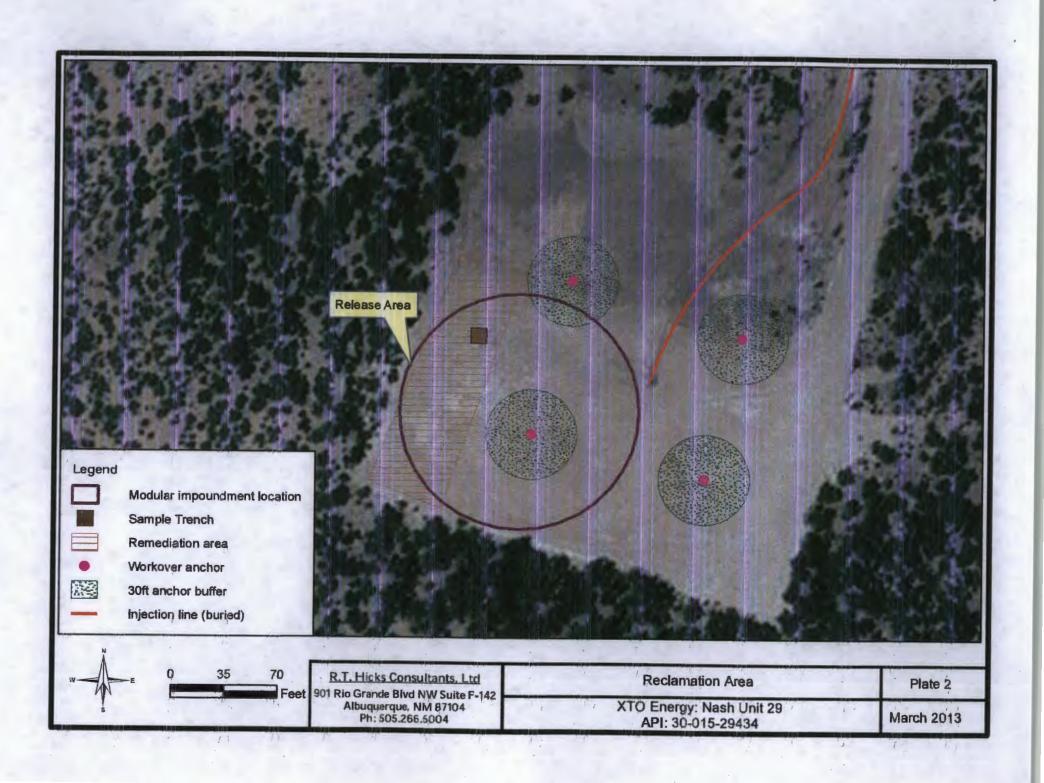
The remediation plan is presented below.

Remediation Plan

XTO Energy proposes to excavate and dispose of the western third (30%) of the caliche pad that was in contact with the modular impoundment. The 30% area includes the release area and out beyond to the edge of the caliche pad. Plate 2 identifies the area proposed for remediation. The excavated material will be transported to R360 or equivalent for proper disposal.

The remediated area will be contoured and seeded using BLM Seed Mixture Type 4 with Giant Sacaton seed added to the mixture. The excavated area is also subject to BLM's interim reclamation plan.







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

November 29, 2012

Andrew Parker

R.T. Hicks Consultants, LTD 901 Rio Grande Blvd. NW Suite F-142

Albuquerque, NM 87104 TEL: (505) 266-5004 FAX (505) 266-0745

RE: XTO Energy Nash Unit 29 OrderNo.: 1211653

Dear Andrew Parker:

Hall Environmental Analysis Laboratory received 2 sample(s) on 11/14/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/29/2012

CLIENT: R.T. Hicks Consultants, LTD

1211653-001

Lab ID:

Project: XTO Energy Nash Unit 29

Matrix: SOIL

Client Sample ID: Tank Composite Collection Date: 11/13/2012

Received Date: 11/14/2012 10:50:00 AM

Lab ID: 1211033-001	wiatrix:	JOIL	Received D	Received Date: 11/14/2012 10.50.00 Alvi					
Analyses	Result	RL	Qual Units	DF	Date Analyzed				
EPA METHOD 8015B: DIESEL RANG	E ORGANICS				Analyst: JMP				
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/20/2012 6:22:22 AM				
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	11/20/2012 6:22:22 AM				
Surr: DNOP	102	77.6-140	%REC	1	11/20/2012 6:22:22 AM				
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/16/2012 2:32:25 PM				
Surr: BFB	108	84-116	%REC	1	11/16/2012 2:32:25 PM				
EPA METHOD 300.0: ANIONS					Analyst: JRR				
Chloride	7500	300	mg/Kg	200	11/20/2012 6:54:44 PM				
EPA METHOD 8260B: VOLATILES					Analyst: RAA				
Benzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM				
Toluene	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
Ethylbenzene	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
Methyl tert-butyl ether (MTBE)	ND	0.049		1	11/21/2012 7:19:43 PM				
1,2,4-Trimethylbenzene	ND	0.049		1	11/21/2012 7:19:43 PM				
1,3,5-Trimethylbenzene	ND	0.049	5 5	1	11/21/2012 7:19:43 PM				
1,2-Dichloroethane (EDC)	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
1,2-Dibromoethane (EDB)	ND	0.049		1	11/21/2012 7:19:43 PM				
Naphthalene	ND	0.043		1	11/21/2012 7:19:43 PM				
1-Methylnaphthalene	ND	0.19	0 0	1	11/21/2012 7:19:43 PM				
2-Methylnaphthalene	ND	0.19	- •	1	11/21/2012 7:19:43 PM				
Acetone	ND	0.73		1	11/21/2012 7:19:43 PM				
Bromobenzene	ND	0.049		1	11/21/2012 7:19:43 PM				
Bromodichloromethane	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
Bromoform	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
Bromomethane	ND	0.049		1	11/21/2012 7:19:43 PM				
2-Butanone	ND	0.19		1	11/21/2012 7:19:43 PM				
Carbon disulfide	ND	0.49		1	11/21/2012 7:19:43 PM				
Carbon tetrachloride	ND	0.097		1	11/21/2012 7:19:43 PM				
Chlorobenzene	ND	0.049	• •	1	11/21/2012 7:19:43 PM				
Chloroethane	ND	0.097	0 0	1	11/21/2012 7:19:43 PM				
Chloroform	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
Chloromethane	ND	0.15	•	1	11/21/2012 7:19:43 PM				
2-Chlorotoluene	ND	0.049	0 0	1	11/21/2012 7:19:43 PM				
4-Chlorotoluene	ND	0.049		1	11/21/2012 7:19:43 PM				
cis-1,2-DCE	ND	0.049		1	11/21/2012 7:19:43 PM				
cis-1,3-Dichloropropene	ND	0.049		1	11/21/2012 7:19:43 PM				
1,2-Dibromo-3-chloropropane	ND	0.097		1	11/21/2012 7:19:43 PM				
Dibromochloromethane	ND	0.049	• •	1	11/21/2012 7:19:43 PM				
Dibromomethane	ND	0.097	• •	1	11/21/2012 7:19:43 PM				
1,2-Dichlorobenzene	ND	0.049		1	11/21/2012 7:19:43 PM				

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range

Reporting Detection Limit

- Analyte detected below quantitation limits
- Sample pH greater than 2
- Not Detected at the Reporting Limit

В

Н

- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits 1 of 12

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

Date Reported: 11/29/2012

Hall Environmental Analysis Laboratory, Inc.

Matrix: SOIL

CLIENT: R.T. Hicks Consultants, LTD

XTO Energy Nash Unit 29

Lab ID: 1211653-001 Client Sample ID: Tank Composite

Collection Date: 11/13/2012

Received Date: 11/14/2012 10:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
1,3-Dichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,4-Dichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Dichlorodifluoromethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,1-Dichloroethane	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
1,1-Dichloroethene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,2-Dichloropropane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,3-Dichloropropane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
2,2-Dichloropropane	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
1,1-Dichloropropene	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
Hexachlorobutadiene	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
2-Hexanone	ND	0.49	mg/Kg	1	11/21/2012 7:19:43 PM
Isopropylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
4-Isopropyltoluene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
4-Methyl-2-pentanone	ND	0.49	mg/Kg	1	11/21/2012 7:19:43 PM
Methylene chloride	ND	0.15	mg/Kg	1	11/21/2012 7:19:43 PM
n-Butylbenzene	ND	0.15	mg/Kg	1	11/21/2012 7:19:43 PM
n-Propylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
sec-Butylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Styrene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
tert-Butylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,1,1,2-Tetrachloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,1,2,2-Tetrachloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Tetrachloroethene (PCE)	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
trans-1,2-DCE	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
trans-1,3-Dichloropropene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,2,3-Trichlorobenzene	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
1,2,4-Trichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,1,1-Trichloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,1,2-Trichloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Trichloroethene (TCE)	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Trichlorofluoromethane	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
1,2,3-Trichloropropane	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
Vinyl chloride	ND	0.049	mg/Kg	1	11/21/2012 7:19:43 PM
Xylenes, Total	ND	0.097	mg/Kg	1	11/21/2012 7:19:43 PM
Surr: 1,2-Dichloroethane-d4	93.2	70-130	%REC	1	11/21/2012 7:19:43 PM
Surr: 4-Bromofluorobenzene	92.4	70-130	%REC	1	11/21/2012 7:19:43 PM
Surr: Dibromofluoromethane	90.7	70-130	%REC	1	11/21/2012 7:19:43 PM
Surr: Toluene-d8	101	70-130	%REC	1	11/21/2012 7:19:43 PM
EPA METHOD 418.1: TPH					Analyst: LRW
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	11/21/2012
•					

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RLReporting Detection Limit

- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Matrix: SOIL

Date Reported: 11/29/2012

CLIENT: R.T. Hicks Consultants, LTD

Project: XTO Energy Nash Unit 29

Lab ID: 1211653-002 Client Sample ID: BG Composite Collection Date: 11/13/2012

Received Date: 11/14/2012 10:50:00 AM

Analyses	Result	RL (Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	E ORGANICS				Analyst: JMP
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/20/2012 8:28:08 AM
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	11/20/2012 8:28:08 AM
Surr: DNOP	98.6	77.6-140	%REC	1	11/20/2012 8:28:08 AM
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	11/16/2012 3:01:11 PM
Surr: BFB	101	84-116	%REC	1	11/16/2012 3:01:11 PM
EPA METHOD 300.0: ANIONS					Analyst: JRR
Chloride	3000	150	mg/Kg	100	11/20/2012 7:07:09 PM
EPA METHOD 8260B: VOLATILES					Analyst: RAA
Benzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Toluene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Ethylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Methyl tert-butyl ether (MTBE)	N D	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,2,4-Trimethylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,3,5-Trimethylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,2-Dichloroethane (EDC)	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,2-Dibromoethane (EDB)	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Naphthalene	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
1-Methylnaphthalene	ND	0.20	mg/Kg	1	11/21/2012 7:48:47 PM
2-Methylnaphthalene	ND	0.20	mg/Kg	1	11/21/2012 7:48:47 PM
Acetone	ND	0.74	mg/Kg	1	11/21/2012 7:48:47 PM
Bromobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Bromodichloromethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Bromoform	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Bromomethane	ND	0.15	mg/Kg	1	11/21/2012 7:48:47 PM
2-Butanone	ND	0.49	mg/Kg	1	11/21/2012 7:48:47 PM
Carbon disulfide	ND	0.49	mg/Kg	1	11/21/2012 7:48:47 PM
Carbon tetrachloride	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
Chlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Chloroethane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
Chloroform	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Chloromethane	ND	0.15	mg/Kg	1	11/21/2012 7:48:47 PM
2-Chlorotoluene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
4-Chlorotoluene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
cis-1,2-DCE	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
cis-1,3-Dichloropropene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,2-Dibromo-3-chloropropane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
Dibromochloromethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Dibromomethane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
1,2-Dichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- RLReporting Detection Limit

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - R RPD outside accepted recovery limits
 - Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/29/2012

CLIENT: R.T. Hicks Consultants, LTD

Client Sample ID: BG Composite

Project: XTO Energy Nash Unit 29

Collection Date: 11/13/2012

Lab ID: 1211653-002 Matrix: SOIL

Received Date: 11/14/2012 10:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES					Analyst: RAA
1,3-Dichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,4-Dichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
Dichlorodifluoromethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,1-Dichloroethane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
1,1-Dichloroethene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,2-Dichloropropane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
1,3-Dichloropropane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PM
2,2-Dichloropropane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
1,1-Dichloropropene	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
Hexachlorobutadiene	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PM
2-Hexanone	ND	0.49	mg/Kg	1	11/21/2012 7:48:47 PM
Isopropylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
4-Isopropyltoluene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
4-Methyl-2-pentanone	ND	0.49	mg/Kg	1	11/21/2012 7:48:47 PI
Methylene chloride	ND	0.15	mg/Kg	1	11/21/2012 7:48:47 PI
n-Butylbenzene	ND	0.15	mg/Kg	1	11/21/2012 7:48:47 PI
n-Propylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
sec-Butylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
Styrene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
tert-Butylbenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,1,1,2-Tetrachloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,1,2,2-Tetrachloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
Tetrachloroethene (PCE)	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
trans-1,2-DCE	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
trans-1,3-Dichloropropene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,2,3-Trichlorobenzene	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PI
1,2,4-Trichlorobenzene	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,1,1-Trichloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,1,2-Trichloroethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
Trichloroethene (TCE)	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
Trichlorofluoromethane	ND	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
1,2,3-Trichloropropane	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PI
Vinyl chloride	ND:	0.049	mg/Kg	1	11/21/2012 7:48:47 PI
Xylenes, Total	ND	0.099	mg/Kg	1	11/21/2012 7:48:47 PI
Surr: 1,2-Dichloroethane-d4	94.2	70-130	%REC	1	11/21/2012 7:48:47 PI
Surr: 4-Bromofluorobenzene	87.7	70-130	%REC	1	11/21/2012 7:48:47 PI
Surr: Dibromofluoromethane	91.6	70-130	%REC	1	11/21/2012 7:48:47 P
Surr: Toluene-d8	105	70-130	%REC	1	11/21/2012 7:48:47 PI
EPA METHOD 418.1: TPH					Analyst: LRV
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	11/21/2012

Qualifiers:

- Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank В
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653

29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID MB-4894

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

PBS Prep Date: 11/19/2012 Batch ID: 4894

RunNo: 7001

Analysis Date: 11/19/2012 SPK value SPK Ref Val %REC LowLimit PQL

SeqNo: 202928

HighLimit

RPDLimit Qual

Analyte Chloride

ND 1.5

Sample ID LCS-4894

11/19/2012

SampType: LCS

TestCode: EPA Method 300.0: Anions

Client ID: LCSS

Batch ID: 4894

RunNo: 7001

Units: mg/Kg

Prep Date: Analyte

Analysis Date: 11/19/2012

SeqNo: 202929

%RPD **RPDLimit**

Qual

PQL SPK value SPK Ref Val %REC LowLimit

%RPD

15.00

110

HighLimit

Chloride

90.0

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits Sample pH greater than 2
- Analyte detected in the associated Method Blank В
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653

29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID MB-4901

SampType: MBLK

TestCode: EPA Method 418.1: TPH

Client ID:

PBS

Batch ID: 4901

RunNo: 7021

Analysis Date: 11/21/2012

Units: mg/Kg

Prep Date: 11/19/2012

PQL

SeqNo: 203589

HighLimit

RPDLimit Qual

Petroleum Hydrocarbons, TR

ND 20

Sample ID LCS-4901 Client ID: LCSS

SampType: LCS Batch ID: 4901 TestCode: EPA Method 418.1: TPH

%REC LowLimit

SPK value SPK Ref Val

RunNo: 7021

104

Units: mg/Kg

120

%RPD

Analyte

Prep Date:

11/19/2012

Analysis Date: 11/21/2012

SPK value SPK Ref Val %REC

SeqNo: 203590 LowLimit

HighLimit

%RPD **RPDLimit** Qual

Qual

Petroleum Hydrocarbons, TR Sample ID LCSD-4901

SampType: LCSD

PQL

20

TestCode: EPA Method 418.1: TPH

Client ID: Prep Date:

LCSS02 11/19/2012

Batch ID: 4901

Result

100

110

Analysis Date: 11/21/2012

RunNo: 7021 SeqNo: 203591

80

Units: mg/Kg

RPDLimit

Analyte

PQL

20

SPK value SPK Ref Val

%REC

LowLimit

HighLimit 120 %RPD

Petroleum Hydrocarbons, TR

100.0

100.0

106

1.28

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- Analyte detected below quantitation limits Sample pH greater than 2
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н

RPD outside accepted recovery limits

- ND Not Detected at the Reporting Limit
- Page 6 of 12

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1211653 29-Nov-12**

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Project: XTO	Energy Nash Unit 2	9						
Sample ID MB-4900	SampType: N	IBLK	TestCode:	EPA Method	8015B: Diesel	Range (Organics	
Client ID: PBS	Batch ID: 4	900	RunNo:	6989				
Prep Date: 11/19/2012	Analysis Date:	11/20/2012	SeqNo:	202423	Units: mg/Kg			
Analyte	Result PQL	SPK value	SPK Ref Val %REG	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10)						
Motor Oil Range Organics (MRO)	ND 50)						
Surr: DNOP	9.9	10.00	98.	3 77.6	140			
Sample ID LCS-4900 SampType: LCS TestCode: EPA Method 8015B: Diesel Range Organics								
Client ID: LCSS	Batch ID: 4	900	RunNo:	6989				
Prep Date: 11/19/2012	Analysis Date:	11/20/2012	SeqNo:	202424	Units: mg/Kg			
Analyte	Result PQL	SPK value	SPK Ref Val %REG	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51 10	50.00	0 10	2 47.4	122			
Surr: DNOP	4.0	5.000	80.3	77.6	140			
Sample ID 1211653-001A	MS SampType: N	IS	TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID: Tank Compos	site Batch ID: 4	900	RunNo: 6989					
Prep Date: 11/19/2012	Analysis Date:	11/20/2012	SeqNo:	202426	Units: mg/Kg			
Analyte	Result PQL	SPK value	SPK Ref Val %REG	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54 10	50.97	0 10	12.6	148			
Surr: DNOP	4.8	5.097	94.0	77.6	140			
Sample ID 1211653-001A	MSD SampType: N	ISD	TestCode:	EPA Method	8015B: Diesel	Range (Organics	
Client ID: Tank Compos	site Batch ID: 4	900	RunNo:	6989				
Prep Date: 11/19/2012	Analysis Date:	11/20/2012	SeqNo:	202569	Units: mg/Kg			

Campic ID 1211030-00 Pandb Campi ypc. INSD					restouce. Era metrou builds, bleser range Organics						
Client ID: Tank Composite Batch ID: 4900			F	RunNo: 6	989						
Prep Date: 11/19/2012		Analysis Da	ate: 1 1	/20/2012	S	SeqNo: 2	02569	Units: mg/K	ζg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Org	janics (DRO)	53	10	51.18	0	104	12.6	148	0.773	22.5	
Surr: DNOP		5.1		5.118		98.8	77.6	140	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

Page 7 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653

29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID MB-4851	SampT	уре: МЕ	BLK	Tes	TestCode: EPA Method 8015B: Gasoline Range						
Client ID: PBS	Batch	n ID: 48	51	F	RunNo: 6	951					
Prep Date: 11/15/2012	Analysis D)ate: 11	/16/2012	8	SeqNo: 2	02014	Units: mg/K	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	990		1000		99.3	84	116				
Sample ID I CS 4954	CompT	ivno: LC	c	Too		DA Madhad	9045D: Case	lias Dana			

Sample ID LCS-4851	Sampi	ype: LC	S	les	tCode: E	PA Method	8015B: Gaso	oline Rang	е	
Client ID: LCSS	Batch	1D: 48	51	F	RunNo: 6	951				
Prep Date: 11/15/2012	Analysis D	ate: 11	1/16/2012	8	SeqNo: 2	02015	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.3	74	117			
Surr: BFB	1000		1000		104	84	116			

Sample ID	1211653-001AMS	SampT	ype: MS	5	TestCode: EPA Method 8015B: Gasoline Range						
Client ID:	Tank Composite	Batch	ID: 48	51	R	RunNo: 6	951				
Prep Date:	11/15/2012	Analysis D	ate: 11	1/16/2012	S	SeqNo: 2	02020	Units: mg/K			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range	e Organics (GRO)	29	4.9	24.63	0	118	70	130			
Surr: BFB		1100		985.2		109	84	116			

Sample ID 1	1211653-001AMSD) SampTy	pe: M \$	SD	Tes	tCode: El	PA Method	8015B: Gaso	oline Rang	е	
Client ID: T	Tank Composite	Batch	ID: 48	51	F	RunNo: 6	951				
Prep Date:	11/15/2012	Analysis Da	te: 1	1/16/2012	12 SeqNo: 2020			Units: mg/k	< g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range	Organics (GRO)	29	5.0	24.75	0	118	70	130	0.0876	22.1	
Surr: BFB		1100		990.1		109	84	116	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653 29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID mb-4851	SampT	ype: MB	LK	Tes	tCode: El	PA Method	8260B: VOL	ATILES		
Client ID: PBS		 n ID: 485		F	RunNo: 7 0	060				
Prep Date: 11/15/2012	Analysis D	ate: 11	/21/2012	s	SeqNo: 2	04634	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.10								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.10								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.10								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.030								
	ND ND	0.10								
1,1-Dichloropropene		0.10								
Hexachlorobutadiene	ND	0.10								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 9 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653

29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID mb-4851	SampT	ype: MBLK	Tes	tCode: EPA Method	8260B: VOLATILES	
Client ID: PBS	Batch	n ID: 4851	F	RunNo: 7060		
Prep Date: 11/15/2012	Analysis D	Date: 11/21/2012	S	SeqNo: 204634	Units: mg/Kg	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
2-Hexanone	ND	0.50				
Isopropylbenzene	ND	0.050				
4-Isopropyltoluene	ND	0.050				
4-Methyl-2-pentanone	ND	0.50				
Methylene chloride	ND	0.15				
n-Butylbenzene	ND	0.15				
n-Propylbenzene	ND	0.050				
sec-Butylbenzene	ND	0.050				
Styrene	ND	0.050				
tert-Butylbenzene	ND	0.050				
1,1,1,2-Tetrachloroethane	ND	0.050				
1,1,2,2-Tetrachloroethane	ND	0.050				
Tetrachioroethene (PCE)	ND	0.050				
trans-1,2-DCE	ND	0.050				
trans-1,3-Dichloropropene	ND	0.050				
1,2,3-Trichlorobenzene	ND	0.10				
1,2,4-Trichlorobenzene	ND	0.050				
1,1,1-Trichloroethane	ND	0.050				
1,1,2-Trichloroethane	ND	0.050				
Trichloroethene (TCE)	ND	0.050				
Trichlorofluoromethane	ND	0.050				
1,2,3-Trichloropropane	ND	0.10				
Vinyl chloride	ND	0.050				
Xylenes, Total	ND	0.10				
Surr: 1,2-Dichloroethane-d4	0.47	0.5000)	93.2 70	130	
Surr: 4-Bromofluorobenzene	0.45	0.5000)	89.4 70	130	
Surr: Dibromofluoromethane	0.46	0.5000)	92.3 70	130	
Surr: Toluene-d8	0.52	0.5000)	103 70	130	

Sample ID Ics-4851	SampT	ype: LC	s	Tes	tCode: El	ATILES				
Client ID: LCSS	Batch	1D: 48	51	F	Run N o: 7 0					
Prep Date: 11/15/2012	Analysis D)ate: 11	1/21/2012	8	SeqNo: 204635 Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	108	80	120			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	110	74	124			
Trichloroethene (TCE)	0.88	0.050	1.000	0	87.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.4	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		86.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits

Page 10 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653 29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID Ics-4851	SampT	ype: LC	s	Test	ATILES					
Client ID: LCSS	Batch	ID: 48	51	R	tunNo: 7	060				
Prep Date: 11/15/2012	Analysis D	Analysis Date: 11/21/2012			eqNo: 2	04635	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.47		0.5000		93.7	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

Sample ID 1211653-002ams	SampT	ype: MS	;	Test						
Client ID: BG Composite	Batch	1D: 48	51	R	RunNo: 70					
Prep Date: 11/15/2012	Analysis D	ate: 11	1/21/2012	S	SeqNo: 2 0	04638	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.049	0.9804	0	92.9	80.9	118			
Toluene	0.95	0.049	0.9804	0	97.4	69.5	119			
Chlorobenzene	0.87	0.049	0.9804	0	88.9	75.7	115			
1,1-Dichloroethene	0.99	0.049	0.9804	0.01122	100	68.6	126			
Trichloroethene (TCE)	0.81	0.049	0.9804	0	82.4	68.7	115			
Surr: 1,2-Dichloroethane-d4	0.47		0.4902		96.4	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.4902		85.6	70	130			
Surr: Dibromofluoromethane	0.47		0.4902		95.4	70	130			
Surr: Toluene-d8	0.50		0.4902		102	70	130			

Sampi	ype: MS	SD	res	(Code: E	AIILES				
Batch	ID: 48	51	RunNo: 7060						
Analysis D	ate: 11	1/21/2012	S	SeqNo: 204639 Units: mg/Kg					
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
0.92	0.049	0.9891	0	93.3	80.9	118	1.30	20	
0.98	0.049	0.9891	0	98.8	69.5	119	2.28	20	
0.88	0.049	0.9891	0	89.3	75.7	115	1.32	20	
1.0	0.049	0.9891	0.01122	99.6	68.6	126	0.357	24.8	
0.82	0.049	0.9891	0	83.3	68.7	115	1.99	20	
0.47		0.4946		95.9	70	130	0	0	
0.41		0.4946		83.4	70	130	0	0	
0.48		0.4946		96.6	70	130	0	0	
0.51		0.4946		104	70	130	0	0	
	Batch Analysis D Result 0.92 0.98 0.88 1.0 0.82 0.47 0.41 0.48	Batch ID: 48 Analysis Date: 11 Result PQL 0.92 0.049 0.98 0.049 0.88 0.049 1.0 0.049 0.82 0.049 0.47 0.41 0.48	Batch ID: 4851 Analysis Date: 11/21/2012 Result PQL SPK value 0.92 0.049 0.9891 0.98 0.049 0.9891 0.88 0.049 0.9891 1.0 0.049 0.9891 0.82 0.049 0.9891 0.47 0.4946 0.41 0.4946 0.48 0.48	Batch ID: 4851 Feature Batch ID: 4851 Feature Batch ID: 4851 Analysis Date: 11/21/2012 SPK value SPK Ref Val 0.92 0.049 0.9891 0 0.98 0.049 0.9891 0 0.88 0.049 0.9891 0 1.0 0.049 0.9891 0.01122 0.82 0.049 0.9891 0 0.47 0.4946 0.41 0.4946 0.48 0.4946	Batch ID: 4851 RunNo: 7 Analysis Date: 11/21/2012 SeqNo: 2 Result PQL SPK value SPK Ref Val %REC 0.92 0.049 0.9891 0 93.3 0.98 0.049 0.9891 0 98.8 0.88 0.049 0.9891 0 89.3 1.0 0.049 0.9891 0.01122 99.6 0.82 0.049 0.9891 0 83.3 0.47 0.4946 95.9 0.41 0.4946 83.4 0.48 0.4946 96.6	Batch ID: 4851 RunNo: 7060 Analysis Date: 11/21/2012 SeqNo: 204639 Result PQL SPK value SPK Ref Val %REC LowLimit 0.92 0.049 0.9891 0 93.3 80.9 0.98 0.049 0.9891 0 98.8 69.5 0.88 0.049 0.9891 0 89.3 75.7 1.0 0.049 0.9891 0.01122 99.6 68.6 0.82 0.049 0.9891 0 83.3 68.7 0.47 0.4946 95.9 70 0.41 0.4946 83.4 70 0.48 0.4946 96.6 70	Batch ID: 4851 RunNo: 7060 Analysis Date: 11/21/2012 SeqNo: 204639 Units: mg/F Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit 0.92 0.049 0.9891 0 93.3 80.9 118 0.98 0.049 0.9891 0 98.8 69.5 119 0.88 0.049 0.9891 0 89.3 75.7 115 1.0 0.049 0.9891 0.01122 99.6 68.6 126 0.82 0.049 0.9891 0 83.3 68.7 115 0.47 0.4946 95.9 70 130 0.41 0.4946 83.4 70 130 0.48 0.4946 96.6 70 130	Batch ID: 4851 RunNo: 7060 Analysis Date: 11/21/2012 SeqNo: 204639 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD 0.92 0.049 0.9891 0 93.3 80.9 118 1.30 0.98 0.049 0.9891 0 98.8 69.5 119 2.28 0.88 0.049 0.9891 0 89.3 75.7 115 1.32 1.0 0.049 0.9891 0.01122 99.6 68.6 126 0.357 0.82 0.049 0.9891 0 83.3 68.7 115 1.99 0.47 0.4946 95.9 70 130 0 0.41 0.4946 83.4 70 130 0 0.48 0.4946 96.6 70 130 0	Batch ID: 4851 RunNo: 7060 Analysis Date: 11/21/2012 SeqNo: 204639 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit 0.92 0.049 0.9891 0 93.3 80.9 118 1.30 20 0.98 0.049 0.9891 0 98.8 69.5 119 2.28 20 0.88 0.049 0.9891 0 89.3 75.7 115 1.32 20 1.0 0.049 0.9891 0.01122 99.6 68.6 126 0.357 24.8 0.82 0.049 0.9891 0 83.3 68.7 115 1.99 20 0.47 0.4946 95.9 70 130 0 0 0.41 0.4946 83.4 70 130 0 0 0.48 0.4946 66.6 70 130 0 0

Sample ID mb-4881	SampT	уре: Мі	BLK	Tes						
Client ID: PBS	Batch	Batch ID: 4881			RunNo: 7	060				
Prep Date: 11/19/2012	Analysis D	ate: 1	1/21/2012	S	SeqNo: 2	04640	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.5	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.8	70	130			
Surr: Dibromofluoromethane	0.46		0.5000		92.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

Page 11 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#:

1211653 29-Nov-12

Client:

R.T. Hicks Consultants, LTD

Project:

XTO Energy Nash Unit 29

Sample ID Ics-4881	SampType: LCS			Test	ATILES					
Client ID: LCSS	Batch	1D: 48	81	R	lunNo: 7	060				
Prep Date: 11/19/2012	Analysis D	ate: 1	1/21/2012	S	eqNo: 2	04641	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.6	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.1	70	130			
Surr: Dibromofluoromethane	0.46		0.5000		92.8	70	130	,		
Surr: Toluene-d8	0.53		0.5000		106	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

RPD outside accepted recovery limits

ND Not Detected at the Reporting Limit

Page 12 of 12



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-410;

Sample Log-In Check List

Website: www.hallenvironmental.com RT HICKS Client Name: Work Order Number: 1211653 MG- 11/14//2 Received by/date: am Am Logged By: 11/14/2012 10:50:00 AM Anne Thorne am Ilm Completed By: Anne Thorne 11/19/2012 Reviewed By: Chain of Custody Yes 🗌 No 🗌 Not Present ✓ 1. Were seals intact? Yes V No 2. Is Chain of Custody complete? Not Present 3. How was the sample delivered? Client Log in NA 🗹 Yes \square No \square 4. Coolers are present? (see 19. for cooler specific information) Yes V No NA 🗌 5. Was an attempt made to cool the samples? Yes 🗸 No 🗌 NA 🔲 6. Were all samples received at a temperature of >0° C to 6.0°C Yes V No 7. Sample(s) in proper container(s)? Yes 🗹 No 🗌 8. Sufficient sample volume for indicated test(s)? Yes 🗹 No 🗌 9. Are samples (except VOA and ONG) properly preserved? Yes 🗌 No 🗸 NA 🗌 10 Was preservative added to bottles? Yes 🗌 No 🔲 No VOA Vials 🗹 11. VOA vials have zero headspace? Yes D No 🗹 12. Were any sample containers received broken? # of preserved Yes 🗸 No 🗌 13. Does paperwork match bottle labels? bottles checked (Note discrepancies on chain of custody) for pH: Yes V No 14. Are matrices correctly identified on Chain of Custody? (<2 or >12 unless noted) Yes V No 🗆 Adjusted? 15. Is it clear what analyses were requested? Yes 🗸 No 🗌 16. Were all holding times able to be met? (If no, notify customer for authorization.) Checked by: Special Handling (if applicable) 17. Was client notified of all discrepancies with this order? Yes 🗌 No 🗌 NA 🗹 Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 18 Additional remarks:

19. Cooler Information

Cooler No	Temp ℃	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

S	hain	-of-Cu	Chain-of-Custody Record	Tum-Around Time:	Time:				I		Ī	<u> </u>		2	HALL ENVIDONMENT	Ĭ	
Client:	R.T. 4	licks 1	R.T. Hicks Consultants	D Standard	Rush				. <	ĮŽ	}	IS	23	Ö	ANALYSIS LABORATORY	OR.	, ≻
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□ EDD (Type)	(Type)_			Samues							slat			OΛ-) (V
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + MT	BTEX + MT	TPH (Metho	EDB (Metho	RCRA 8 Me	OJA) snoinA S081 Pestic	8260B (VO.	ime2) 07 <u>\$</u> 8			Rit Bubbles
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Date:	Time:	Relinquished by:	ed by:	Received by:		Date Time	** Do	hot		analize		2 Ju.	point samples		R6 # 1	1 T	١. ٧
							Lab	Lab romoosile	1005		Tank	#4	-5.4	Lab S	Tank #1-5-1-ab composite	ay B	Sto #1
<u>+</u>	necessary,	samples subr	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	intracted to other ac	credited laboratories.	This serves as notice of this	s possibilit	. Any su	b-confra	cted date	will be	searly no	ptated on	the ana	lytical repo	j.	



February 18, 2013

ANDREW PARKER
R T HICKS CONSULTANTS
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE, NM 87104

RE: XTO NASH UNIT 29

Enclosed are the results of analyses for samples received by the laboratory on 02/13/13 7:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab accred certif.html.

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey & Keene

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

R T HICKS CONSULTANTS ANDREW PARKER 901 RIO GRANDE BLVD SUITE F-142 **ALBUQUERQUE NM, 87104** NONE

Fax To:

Received:

02/13/2013

Sampling Date:

02/11/2013

Reported:

02/18/2013

Sampling Type:

Soil

Project Name:

XTO NASH UNIT 29

Sampling Condition:

Cool & Intact

NONE GIVEN

Sample Received By:

Jodi Henson

Project Number: Project Location:

UNIT 'J', SEC. 13, T23S, R29E

Sample ID: SAMPLE TRENCH @ 2' BGS (H300404-01)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3480	16.0	02/18/2013	ND	448	112	400	0.00	
Conductivity 120.1	uS/	cm	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Conductivity*	8010	1.00	02/15/2013		476	95.2	500	0.752	
Sample ID: SAMPLE TREN	CH @ 4' BGS ((H300404-02)							
Chloride, SM4500Cl-B	mg.	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2120	16.0	02/18/2013	ND	416	104	400	3.77	
Conductivity 120.1	uS/	cm	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Conductivity*	6020	1.00	02/15/2013		476	95.2	500	0.752	
Sample ID: SAMPLE TREN	CH @ 6' BGS	(H300404-03)							
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	02/18/2013	ND	416	104	400	3.77	
Conductivity 120.1	uS/	cm	Analyze	d By: DW			·-		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Conductivity*	7050	1.00	02/15/2013		476	95.2	500	0.752	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed valved unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by Clernt, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This reproduced except in full with written approval of Cardinal laboratories.

Celen & Keene

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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

Celey & Kune

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

R 29 E Chis on the first of th		101 East Mariand, Hobbs, IVNI 88246 (575) 393-2326 FAX (575) 393-2476	.c.G									
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Company: R. T. H. Attn: R. 2.9 E. State: Chi Son City: R. 2.9 E. Phone #: Fax #: Fax #: Fax #: Folio Columbany: R. T. H. Folio Columbany: R. T.	Project Manage	Pr. Andrew Packer		P.O. #								
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† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326 5 9 * * 2) (CHECKED BY: Sample Condition
Cool Intact
Fives Yes

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Relinquished By: 9Al

Kristin @

Page 4 of 4

andrew & cthicks consolt, com

amont analyses to

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

January 28, 2013

Mr. Brad Jones Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

RE: Closure Report for Part 34 Use Permit for Treating Produced Water using CleanWave™ Technology.

Operator: XTO Energy

Location: Nash Unit #4. (API No. 30-015-21777)
 Sec 13, T23S, R29E, Unit A

Dear Mr. Jones:

R.T. Hicks consultants is pleased to submit this Closure Report for the above referenced location on the behalf of XTO Energy. Closure activities were performed in accordance with the approved letter application dated May 22, 2012 (Appendix A). The location of the CleanWave system is shown on Plate 1.

On June 20th, 2012, XTO Energy began sending treated water from Halliburton's CleanWave system, located at Nash Unit #4, to the Poseidon Modular Impoundment (Poseidon tank) located at Nash Unit #29. On June 25, 2012, the first well, Nash Unit 39H, was fractured using treated water. On September 26, 2012, the last well, Nash Unit 49, was fractured using treated water. The transfer completion date, in lieu of rig release date, was October 5, 2012.

Closure activities for the CleanWave system began on October 5, 2012. All remaining fluid in the CleanWave System was sent to the Poseidon modular impoundment for fracturing the last well. Residual sludge in the CleanWave System was removed for proper disposal. Operation logs for the CleanWave system are presented in Appendix B and indicate no releases of treated produced water occurred at the location of the Haliburton CleanWave System.

On December 11, 2012, after the remaining CleanWave system was removed off location, we mobilized to the location and restored the surface to pre-existing conditions. Approximately ten gallons of unused filtration granules (Figure 1, Appendix C) were removed from the surface prior to surface restoration. We observed no additional evidence of a release from the CleanWave system.

Using a backhoe, we removed containment berms and graded the site to match surrounding and existing grade. The caliche from the containment berms were re-used to reinforce existing containment berms on location. Figures 2 through 4 show location restoration activities to pre-existing conditions.

January 28, 2013 Page 4

Please contact Andrew Parker at 970-570-9535 if you have any questions or comments.

Sincerely, R.T. Hicks Consultants Durango Field Office

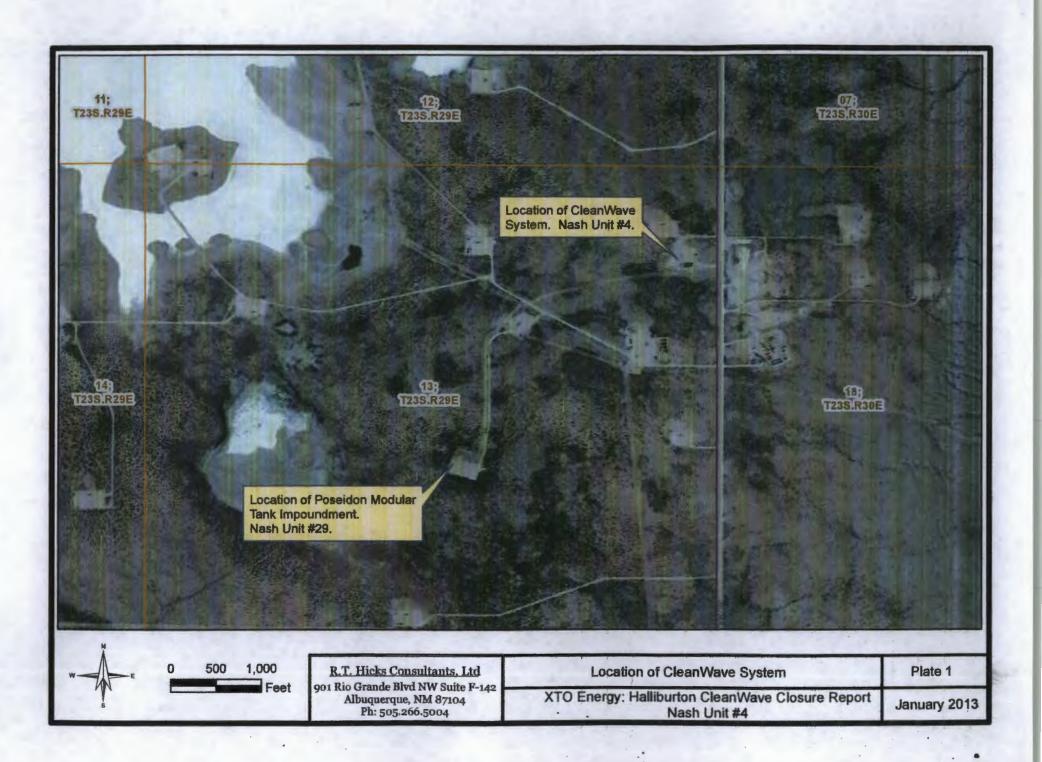
Andrew Parker

Copy: David Luna, XTO Energy (via email)

Donald Martinez, State Land Office (via email)

AP 2/28/2013

PLATES





State of New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez Governor

John Bemis
Cabinet Secretary

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

Jami Bailey Division Director Oil Conservation Division



May 23, 2012

David Luna XTO Energy, Inc. 200 N. Loraine, Ste. 800 Midland, Texas 79705

RE: Request For Temporary Approval To Treat, Store And Use Produced Water

EPWM-010 XTO Energy, Inc.

Location: Unit A, Section 13, Township 23 South, Range 29 East, NMPM

Eddy County, New Mexico

Dear Mr. Luna:

The Oil Conservation Division (OCD) has reviewed XTO Energy, Inc's (XTO) request, dated May 22, 2012, to treat produced water utilizing Halliburton Energy Services, Inc.'s (HESI) CleanWaveTM water treatment technology, and to temporarily store the treated produced water onsite in existing above-grade tanks, prior to transport via a pipeline to a centralized storage location for distribution and reuse for six scheduled hydraulic fracturing operations. Based upon the information provided in the May 22, 2012 request, OCD understands that this project is expected to take approximately 120 days.

This request is hereby approved with the following understandings and conditions:

- XTO shall comply with all applicable requirements of the Produced Water Rule (19.15.34 NMAC), the Oil and Gas Act (Chapter 70, Article 2 NMSA 1978), and all conditions specified in this temporary approval and shall operate and close the project in accordance with the May 22, 2012 request;
- 2. XTO shall store, treat, and use produced water only as proposed in its May 22, 2012 request. XTO shall submit a modification request and obtain OCD's approval prior to the installation of additional tanks or other structures within the boundaries of the facility, initiating any changes in the storage, treatment, or use of the produced water (treated or untreated), or the disposition of any unused produced water:

Mr. Luna XTO Energy, Inc. EPWM-010 May 23, 2012 Page 2 of 3

- XTO shall locate the mobile HESI CleanWave™ water treatment system onto XTO's Nash Unit #4 (API 30-015-21777) well pad within Unit A of Section 13, Township 23 South, Range 29 East, NMPM, Eddy County, New Mexico;
- 4. XTO shall only store, treat, and use produced water from tank battery associated with XTO's Nash 53 SWD (API 30-015-39400), located within Unit H of Section 13, Township 23 South, Range 29 East, NMPM, Eddy County, New Mexico. XTO shall submit a modification request and obtain OCD's approval prior to switching to a new source of the produced water for treatment:
- 5. XTO shall ensure that the HESI CleanWaveTM water treatment system is properly operated and monitored to prevent unauthorized releases;
- XTO will transport the treated produced water to an off-site centralized collection impoundment, located on XTO's Nash Draw Unit #29 well pad within Unit J of Section 13, Township 23 South, Range 29 East, NMPM, Eddy County, New Mexico, for distribution and reuse for six scheduled hydraulic fracturing operations as identified in the May 22, 2012 request.
- 7. XTO shall obtain a separate permit from OCD for the off-site impoundment prior to transporting treated produced water via the pipeline;
- 8. XTO shall report all unauthorized discharges, spills, leaks, and releases of produced water or other oil field waste pursuant to 19.15.29 NMAC;
- XTO shall <u>not</u> manage any oil field waste at the produced water treatment site on the ground in pits, ponds, below-grade tanks or land application units without an OCD approved permit;
- XTO shall not discharge any treated or untreated produced water on the ground, to ground water, or into any surface water body;
- 11. XTO shall ensure that liquid oil field waste (e.g. sludge) and produced water (treated or untreated) is transported using an OCD permitted (C-133 Authorization to Move Produced Water) hauler;
- 12. XTO shall dispose of its solid and semi-solid oil field waste, including, but not limited to, sludge, flocculants, treatment filters, membranes, etc., at R360 Permian Basin, LLC's Surface Waste Management Facility (NM1-006/R-9166) as proposed in its May 22, 2012 request. XTO shall retain records (OCD Form C-138) documenting all oil field waste removed from the site. The records shall indicate the facility name and permit number of the OCD approved facility in which the oil field waste is disposed;
- 13. XTO shall dispose of any unused, treated or untreated produced water at XTO's Nash 53 SWD (API 30-015-39400);

Mr. Luna XTO Energy, Inc. EPWM-010 May 23, 2012 Page 3 of 3

- 14. XTO shall restore the impacted surface area to the condition that existed prior to initiating the approved operations and complete the closure activities, including the submittal of a closure report, as proposed in its May 22, 2012 request; and
- 15. XTO shall submit a report of the volumes of produced water diverted (treated and used) in barrels to the OCD's Environmental Bureau within 30 days after the project is completed.

OCD understands that the above approved activities will occur sometime during the period of June 2012 through October 2012. **This temporary approval shall expire May 23, 2013.** Temporary approval may be revoked or suspended for violation of any applicable provisions and/or conditions. OCD may administratively modify this temporary approval at any time, if it determines that an emergency exists requiring emergency response operations to abate immediate threats to fresh water, public health, and the environment.

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

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

Sincerely,

Jami Bailey Director

JB/baj

ce: OCD District II Office, Artesia

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APPENDIX B

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one re there any addition one	nal supplies	equipment needs	ed? If so, what items and w			Parish	
re there any addition one ave there been any coseidon tank is supposed as client provided as	nal supplies	equipment needs he current schede Wednesday or T	ed? If so, what items and would items and wo		?		
one ave there been any c	nal supplies	equipment needs he current schede Wednesday or T	ed? If so, what items and would be seen and would be seen and would be seen and would be seen and week.		7	XTO	

Date:	6/1	12/2012		Report	Number:		7
					Number:		8
Client:		XTO		FASSES S	hift Onsite Time:	N/A	am/pm
Location:		ash 29			hift Offsite Time:	N/A	am/pm
Site Contact:		Jackson			ystem Run Time:	0	Total hrs
Site Contact:		ıl Worley			Onsite Activities:	PROCES	SS WATER
Processing Hrs	Today:	0 hrs	Cumulativ	e Processing	Hrs:	13	hrs
BBLS Processed	Today:	0 bbls	Cumulativ	e BBLS Proce	ssed:	5,45	2 bbls
BBLS/Hr Proces	ssed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	419.4	bbl/hr
Lead Supervisor:	Pau	ıl Worley	Readings:	flow back	Volts/Amps	pH	Turbidit
Lead Operator	. 00		06:00			F******	
Crew		····	08:00				
			10:00				
<u> </u>			12:00		 		
			14:00				
i			16:00				
<u> </u>			10100	I			
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	1,725	1,725	NO
			Sodium Hydroxide	0	2,280	2,280	NO
Visitors:	ВОЈ	IACKSON					
Visitors:							
			1	1			
Visitors:							
Visitors: Vere there any abnorone			e?	when?	(1) 2011 [200 1] 2 (200 1) 2 (200 1		
Visitors: Were there any abnormal one are there any additional one	nal supplier	s/equipment needs					
Visitors: Vere there any abnormal streethere any additional streethere any additional streethere been any oseidon tank is supposed as client provided a	nal supplied changes to ose to be he	s/equipment needs the current sched tre Wednesday or T	ed? If so, what items and live, including volumes no hursday of next week.		To the second se	Charles Services	
Visitors: Viere there any abnormal one re there any additional one ave there been any additional one oseidon tank is supposed as client provided a Person:	nal supplied changes to ose to be he	s/equipment needs the current sched tre Wednesday or T	ed? If so, what items and which items and which items and which items are received in the second second in the second items are received in the second items are received in the second		TOTAL CONTROL OF THE PARTY OF T	XTO	
Visitors: Were there any abnormal one are there any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there been any additional one lave there are a lave the	nal supplied changes to ose to be he	s/equipment needs the current sched tre Wednesday or T	ed? If so, what items and live, including volumes no hursday of next week.		TOTAL CONTROL OF THE PARTY OF T	XTO	

	5/42	/2042			L		
Date:	6/13	/2012			Number: lumber:		8
Client:		TO			hift Onsite Time:	N/A	am/pm
Location:		sh 29		Shift Offsite Time:		N/A	am/pm
Site Contact:	Bo Ja	ickson		\$	ystem Run Time:	0	Total hrs.
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCE	SS WATER
				W			
Processing Hrs		0 hrs	**************************************	ve Processing		13	hrs
BBLS Processed	Control of the second control	0 bbls		e BBLS Proces			52 bbls
BBLS/Hr Proce	essed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	419.4	4 bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	На	Turbidity
Lead Operator	1 ddi	rvoncy	06:00	HOW DACK	voits/Amps	μn	rorbidity
Crew			08:00	<u> </u>			
CICW			10:00				
<u> </u>			12:00				1
-			14:00				
-			16:00				
-		·	10,00	1		L	L
-	<u></u> -		Chemical	Usage	Start Inv.	End Inv.	On Order
-			HcL Acid	0 0 0	1,725	1,725	NO
L			Sodium Hydroxide	0	2,280	2,280	NO
Visitors:	BO IA	CKSON	Soululli Hydroxide	U	2,200	2,280	I NO
Visitors:		CN3014					
Visitors:			······································				
vietors.				l			<u> </u>
Were there any abno	rmal operatio	nal issues oneita	12				
None	mui operacio	nui issues orisite					
						-	
Are there any addition	nal supplies/e	auipment neede	d? If so, what items and	when?			
Vone				***************************************			

Have there been any	changes to th	e current sched	ule, including volumes ne	eded by client	7		wind respect to the second
Poseidon tank is supp							
		·					
las client provided a	any operationa	il feedback (posi	itive or negative)?				
Person:			Company:			XTO	
N/A							
A ddis: 1 0							
All tanks are full, wai		an tank	alled customer and let him	know Lucia and	nantian this	.i	
All latiks are full ,wai and offered my service	ung on Poseido es while I was i	on location Ro	alled customer and let nim . Jackson said that all is good	know i was on i d	ocation this morn	iing everytning) wass good
and cherea my cervice	ed wille i wad t	on location Bo	rackson sale that all is good	υ,			

Date:	6/14/2012		Report	Number:		9
	-, 2 1, 2022			lumber:		8
Çlient:	XTO		S	hift Onsite Time:	N/A	am/pm
Location:	Nash 29	 		nift Offsite Time:	N/A	am/pm
Site Contact:	Bo Jackson			stem Run Time:	0	Total hrs
Site Contact:	Paul Worley			Onsite Activities:		SS WATER
		The state of the s				
Processing Hrs T			lative Processing		13	hrs
BBLS Processed			ative BBLS Proces			2 bbls
BBLS/Hr Proces	sed: #DIV	0! Cumula	tive BBLS/Hr Proce	essed:	419.4	l bbl/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		06:00				
Crew		08:00				
		10:00				
		12:00				
		14:00				
		16:00				
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	1,725	1,725	NO
		Sodium Hydroxi	de 0	2,280	2,280	NO
Visitors:						
Visitors:						1
	mal operational issue	s onsite?				
one						
one		it needed? If so, what items a				
re there any addition one ave there been any conseidon tank is suppos	hanges to the currer se to be here maybe c	t schedule, including volume		• Application of the control of the		
re there any addition one ave there been any conseidon tank is supposed as client provided an Person:	hanges to the currer se to be here maybe c	t schedule, including volume n Monday.			Attorney XTO	
re there any addition one ave there been any c oseidon tank is suppo-	hanges to the current se to be here maybe of the here may be not be a second of the here where the here with the	t schedule, including volume n Monday. ck (positive or negative)?		Section 1997		

Date:	6/15/2012		Report	Number:		10
		:		lumber:		8
STAND BY WAIT	ING ON TANK					
Client:	XTO		S	hift Onsite Time:	N/A	am/pm
Location:	Nash 29		SI	nift Offsite Time:	N/A	am/pm
Site Contact:	Bo Jackson			ystem Run Time:	0	Total hrs
Site Contact:	Paul Worley		Present (Onsite Activities:	PROCES	SS WATER
Processing Hrs Toda	ıy: 0 hrs	Cumulativ	re Processing	Hrs:	13	hrs
BBLS Processed Toda			e BBLS Proces			2 bbls
BBLS/Hr Processed	#DIV/0!	Cumulative	BBLS/Hr Proce	essed:		bbl/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		06:00		3	p.r.	. Judici
Crew		08:00				
		10:00				
		12:00				
		14:00				
		16:00				
		Chemical	Hoome	Start Inv.	F. J. I.	0- 0-4-
		HcL Acid	Usage 0	1,725	End Inv. 1,725	On Orde NO
L		Sodium Hydroxide	0	2,280	2,280	NO
Visitors:				_,0	2,200	
Visitors:						
Visitors:						
/ere there any abnormal lone	operational issues onsite	17				
re there any additional si one	upplies/equipment neede	ed? If so, what items and v	vhen?			
ave there been any chan	ges to the current sched	ule, including volumes ne	eded by client	7		
	o be here maybe on Monda					
as client provided any or	perational feedback (posi	41.55				22 22778488
Person:	Personal regulack (posi	Company:	1		XTO	<u> </u>
					λ10	
/A						
/A Additional Comments	3 (2000)					

Date:	6/16	/2012	I	Report	Number:		11
			[Unit N	lumber:		8
TAND BY WA			г		106 A 20 T	11/4	
Client:		TO		1 2 2 3 2 4 2 7 2 3 3 7 4 7 7 7	hift Onsite Time:	N/A	am/pm
Location:		sh 29			nift Offsite Time:	N/A 0	am/pm Total hrs
Site Contact:		ackson		D	Onsite Activities:		S WATER
Site Contact:	Paul	Worley	t	Fresent	Unsite Activities.	PROCES	SVAIER
Processing Hrs To	odav:	0 hrs	Cumulativ	e Processing	Hrs	13	hrs
BBLS Processed T		0 bbls		BBLS Proces		5.45	2 bbls
BBLS/Hr Processed: #DIV/0!				BLS/Hr Proc			bbi/hr
DDLOMITTOCES	30U.	#51470:	Community	JOCO (11 1 100		41014	Domin
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рH	Turbidit
Lead Operator			06:00				
Crew			08:00				
			10:00				
			12:00				
			14.00				
			16:00				
				BTCTMCTPTCC			
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	1,725	1,725	NO
		-	Sodium Hydroxide	0	2,280	2,280	NO
Visitors:							
Visitors:							
Visitors:							
ere there any abnorm	nal operatio	nal issues onsite	7				
one ave there been any c	al supplies/	equipment needs	ed? If so, what items and vule, including volumes new are suppose to start filling	eded by client			
re there any addition one	al supplies/ hanges to t se to be here	equipment needs he current sched e on Monday and	ed? If so, what items and v ule, including volumes ne we are suppose to start fillin	eded by client		XTO	

Date:	6/17	7/2012		Report	Number:		12
				Unit N	Number:		8
TAND BY WAI	ITING C	ON TANK					
Client:		TO			hift Onsite Time:	N/A	am/pm
Location:		sh 29		Shift Offsite Time:		N/A	am/pm
Site Contact:		ackson				0	Total hrs
Site Contact:	Paul	Worley	i	Present (Onsite Activities:	PROCES	SS WATER
Processing Hrs To	day:	0 hrs	Cumulativ	re Processing	Hrs:	13	hrs
BBLS Processed To	BBLS Processed Today: 0 bbls			e BBLS Proces		5,45	52 bbls
BBLS/Hr Process	BBLS/Hr Processed: #DIV/0!			BBLS/Hr Proce	essed:	419.4	4 bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	Hq	Turbidit
Lead Operator		,	06:00				Turbiui.
Crew			08:00				
			10:00				<u> </u>
			12:00				<u> </u>
			14:00				
	_		16:00	-			
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	1,725	1,725	NO
			Sodium Hydroxide	0	2,280	2,280	NO
Visitors:							
Visitors:							
Visitors:							
Vere there any abnormatione	al operatio	nal issues onsite	8				
re there any additional one	l supplies/c	equipment neede	ed? If so, what items and w	vhen?			
ave there been any ch	anges to ti	ne current sched	ule, including volumes ne	eded by client	2		
oseidon tank should arri			and promoting . Something	ace of the			
las client provided any	anaration	al fandhack (noei	40-41-41-41-41-41-41-41-41-41-41-41-41-41-				-14000000000000000000000000000000000000
	Operacio	II Ibeaback (pos.	Company:			хто	<u> </u>
Person:			75.000 77.000 77.000	120 30 10000000000	<u></u>	Λ10	
Person:	7.2						

Date:	6/18	3/2012		Report	Number:		13
					umber:		8
STAND BY WA	ITING C	ON TANK					
Client:	X	TO		S	nift Onsite Time:	N/A	am/pm
Location:		sh 29			nift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja	ackson				0	Total hrs
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing	Hrs:	13	hrs
BBLS Processed T		0 bbls		BBLS Proces			2 bbls
BBLS/Hr Process		#DIV/0!	Cumulative I	BBLS/Hr Proce	essed:	419.4	bbl/hr
				The state of the s			25523.5 717
Lead Supervisor:		Worley	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator		Erler	06:00				
Crew	Adam	Pollard	08:00				
			10:00				
-			12:00 14:00				
			16:00				
<u> </u>			10.00				
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	1,725	1,725	NO
			Sodium Hydroxide	0	2,280	2,280	NO
Visitors:		····					
Visitors:							
Visitors:							
Vere there any abnorr Ione	nal operatio	enal issues onsit	e?				
are there any addition.	al supplies/	equipment need	ed? If so, what items and v	vhen?	4		***
lave there been any c	hanges to t	he current scher	lule, including volumes ne	eded by client			
			until 8:00, walls were not up				A - S - A - A - A - A - A - A - A - A -
		700					
						Reday, Comme	STEEL A STREET MINES
las client provided an	y operation	al feedback (pos	itive or negative)?			-525/98 4688/m · · · · (2044 ·)	7.1.3.00 page 20
Person:	y operation	al feedback (pos	citive or negative)? Company:			хто	7.50000
	y operation	al feedback (pos				хто	

Date: 6/19/2012					Report	Number:		4
1 13 11					Unit N	umber:	8	
STAND	BY WA	AITING	ON TA	NK				
Client:	XT				Shift (nsite Time:	6:00	am/pm
Location:	Nasi					ffsite Time:	N/A	am/pm
Contact:	Bo Ja				3111110	more mine.	0	Total hr
Contact:	Paul V				esent Onsit	e Activities:	PROCES	
-i							1	
rocessing I	irs Today	0 hrs		Cumulat	ive Proces	sing Hrs:	13	hrs
BLS Process	sed Toda	0 bbls			ve BBLS P	**************************************	5,452	bbls
BBLS/Hr Pro	ocessed:	#DIV/0!		Cumulative	BBLS/Hr	Processed:	419.4	bbl/hr
			•					
upervisor:	Paul V	Vorley		Readings:	flow back	Volts/Amps	рН	Turbidit
Operator	Adam l	Pollard		06:00				
Crew				08:00				
				10:00				
				12:00				
				14:00				
				16:00				
L								
L				Chemical	Usage	Start Inv.	End Inv.	On Orde
				HcL Acid	0	1,725	1,725	NO
****			So	dium Hydrox	0	2,280	2,280	NO
Visitors:								
Visitors:								
Visitors:								<u> </u>
Vere there a	my shoon	mal anarati	ional leeus	e ensite?	FX774644536		. 1313270	
Vone	iny abnori	nai operati	ionai issue	s onsite?				
Are there an	v addition	al supplies	s/equipme	nt needed?	If so, what	items and	when?	1 1 20 15 5
	y addition	al supplies	s/equipme	nt needed?	lf so, what	items and	when?	
	y addition	al supplies	s/equipme	nt needed?	lf so, what	items and	when?	
Are there an None	y addition	al supplies	s/equipme	nt needed?	lf so, what	items and	when?	
None								ient?
None	een any c	hanges to	the curren					lent?
None	een any c	hanges to	the curren					lent?
lave there b	een any c	hanges to	the curren					lent?
lave there b	een any c oseidon ta	hanges to	the curren	t schedule,	including	volumes na		lent?
Have there be Waiting on Posterior	een any c oseidon ta	hanges to	the curren	t schedule,	including	volumes na		ient?
Have there by Naiting on Potas client preson:	een any c oseidon ta	hanges to	the curren	t schedule, ck (positive	including	volumes na	eded by cl	ient?
Have there by Naiting on Potas client preson:	een any c oseidon ta	hanges to	the curren	t schedule, ck (positive	including	volumes na	eded by cl	ient?
	een any c oseidon ta rovided ar	hanges to	the curren	t schedule, ck (positive	including	volumes na	eded by cl	ient?

Date:	6/2	0/2012		Report	Number:		15
					lumber:		8
Client:	>	KTO			hift Onsite Time:	5:00	am/pn
Location:	Na	ish 29		S	hift Offsite Time:	9:00 PM	am/pn
Site Contact:		lackson				0	Total hr
Site Contact:	Paul	Worley	l	Present	Onsite Activities:	PROCES	SS WATER
Processing Hrs	Today:	0 hrs	Cumulativ	e Processing	Hrs:	13	hrs
BBLS Processed		0 bbls		BBLS Proces			2 bbls
BBLS/Hr Proce	ssed:	#DIV/0!		BLS/Hr Proc	**************************************	419.4	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	На	Turbidi
Lead Operator		n Pollard	06:00		, , , , , , , , , , , ,	P**	
Crew			08:00				
			10:00				
F			12:00				
<u> </u>	*		14:00				
			16:00				
Į	***		Chemical	Usage	Start Inv.	End Inv.	On Ord
			HcL Acid	0	1,725	1,725	YES
			Sodium Hydroxide	0	2,280	2,280	YES
Visitors:	BO JA	ACKSON					
Visitors:	·····						
Visitors:							
ere there any abno ES TRIED PUMP CKSON AND HE H	NG TO MAIN OOKED UP A	CLEAN TANK AI NOTHER PUMP.	ND PRESSURED UP ON LIN		TO PUMP WITH	OUR PUMP.	. CALLED
e there any addition ES FITTINGS FOR 6							
S FITTINGS FOR 6	changes to t	he current sched	ule, including volumes ned	ded by client			
S FITTINGS FOR 6				eded by client	?	XTO	
S FITTINGS FOR 6			itive or negative)?	ded by client		Angles Services	

Date:	6/21/2012		Report	Number:		16
	-,,-			lumber:		8
Client:	хто	**************************************	S	hift Onsite Time:	5:30	am/pm
Location:	Nash 29		S	nift Offsite Time:	5:00 PM	am/pm
Site Contact:	Bo Jackson				9	Total hrs.
Site Contact:	Paul Worley		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs	Foday: 9 I	nrs Cumula	tive Processing	Hrs:	13	hrs
BBLS Processed	Today: 3,828	bbls Cumulat	ve BBLS Proces	ssed:	5,452	bbls
BBLS/Hr Proces	ssed: 425.333	3333 Cumulativ	e BBLS/Hr Proc	essed:	419.4	bbl/hr
Lead Supervisor:	Paul Worley	Readings;	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Adam Poliard	07:30		100	7.23	1.36
Crew	Ken Erler	09:30		100	6.98	1.23
		11:30		100	6.43	1.05
		13:30		100	6.23	0.98
		15:30		100	6.76	1.31
		16:30		100	6.81	1.03
		Chemical	Usage	Start Inv.	End Inv.	On Order
		HcL Acid	213	1,725	1,512	YES
		Sodium Hydroxide	295	2,280	1,985	YES
Visitors:	BO JACKSON					
Visitors:						
Visitors:						
ere there any abnor	mal operational issue	s onsite?				
0						
O						
O re there any addition O	nal supplies/equipmer	nt needed? If so, what items and	l when?			
re there any addition	nal supplies/equipmer	nt needed? If so, what items and	I when?		New York Constitution of the Constitution of t	
re there any addition				3	The back of the state of the st	
re there any addition		nt needed? If so, what items and		?	2002	
re there any addition						
re there any addition ave there been any o	hanges to the curren			?		
re there any addition ave there been any o	hanges to the curren	t schedule, including volumes i		?	XTO	
re there any addition ave there been any o	hanges to the curren	t schedule, including volumes i ck (positive or negative)?			XTO	

	6/22/2002	-				
Date:	6/22/2012			Number: Number:		17 8
		1				
Client:	XTO	7	s	hift Onsite Time:	5:30	am/pm
Location:	Nash 29	_		hift Offsite Time:	12:00 AM	am/pm
Site Contact:	Bo Jackson				11	Total hrs.
Site Contact:	Paul Worley		Present	Onsite Activities:	PROCES	SS WATER
Processing Hrs			e Processing		33	hrs
BBLS Processed			BBLS Proce			55 bbls
BBLS/Hr Proce	ssed: 323.1818182	Cumulative	BBLS/Hr Proc	essed:	388.9	bbi/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Adam Pollard	07:30	man ouck	100	6.57	1.63
Crew	Ken Erler	09:30		100	6.87	1.87
	Ray Lee	11:30		100	6.43	1.19
	Eddy McGruder	13:30		100	7.02	1.98
Γ		15:30	·····	100	7.1	1.32
		16:30		100	6.79	1.27
<u>_</u>					107 TO 1000 A MINOR OF	CO. S. C.
_		Chemical	Usage	Start Inv.	End Inv.	On Order
<u>L</u>		HcL Acid	197	1,512	1,315	YES
	DO 1101/001/	Sodium Hydroxide	262	1,985	1,723	YES
Visitors:	BO JACKSON					
Visitors:						
				l, l		
Vere there any abnor	rmal operational issues ons	ilte?				
		ded? If so, what items and v	vhen?			
10						
lave there been any	changes to the current sche	edule, including volumes ne	eded by cilent	3		
0						
	ny operational feedback (po	ositive or negative)?				
	ny operational feedback (po	ositive or negative)? Company:			хто	
······································	ny operational feedback (po			\$ M. S. M. S	хто	
las client provided a Person: I/A Additional Com	ments			(4.54)		

Date:	6/2	3/2012		Renort	Number:		18
					umber:		8
Client:		KTO		SI	nift Onsite Time:	5:00	am/pm
Location:	Na	ish 29		St	ift Offsite Time:	5:00 AM	am/pm
Site Contact:		lackson				23	Total hr
Site Contact:	Paul	Worley		Present (Onsite Activities	PROCES	S WATER
Processing Hrs	oday:	23 hrs	Cumulativ	e Processing I	trs:	56	hrs
BBLS Processed	Today:	7,541 bbls	Cumulative	BBLS Proces	sed:	20,37	6 bbls
BBLS/Hr Proces	sed:	327.8695652	Cumulative	BBLS/Hr Proce	ssed:	363.9	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	На	Turbidit
Lead Operator		Pollard	07:00	HOTE DOCK	100	7.23	1.98
Crew		n Erler	13:00		100	6.97	1.76
		y Lee	19:00		100	6.72	1.56
-		McGruder	23:00		100	7.15	1.87
			2:00		100	6.45	1.45
			4:00		100	6.81	1.51
			Chemical	Usage	Start Inv.	End Inv.	On Orde
<u> </u>		**	HcL Acid	416	1,315	899	YES
L			Sodium Hydroxide	590	1,723	1,133	YES
Visitors:	BO JA	ACKSON		330	1,723	1,133	,,,,
Visitors:						······································	
Visitors:							
/ere there any abnor ○	mal operation	onal issues onsite	Autoportion				
	al supplies	equipment neede	d? If so, what items and v	vhen?			
0			d? If so, what items and v				
o ave there been any c o as client provided as	hanges to t	he current sched	ule, including volumes ne tive or negative)?			VIO	
O ave there been any o	hanges to t	he current sched	ule, including volumes ne			XTO	

Date:	6/24	1/2012	[Report	Number:		19
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	į	haran da	lumber:		8
			_				
Client:	Х	TO		S	hift Onsite Time:	5:00	am/pm
Location:	Na	sh 29		S	hift Offsite Time:	1:30 PM	am/pm
Site Contact:	Bo J	ackson				8	Total hrs
Site Contact:	Paul	Worley	i	Present	Onsite Activities:	PROCES	S WATER
Processing Hrs T	odav	8 hrs	Cumulativ	e Processing	Ure:	64	hrs
BBLS Processed 1		3,806 bbls		BBLS Proces			2 bbls
BBLS/Hr Proces	-	475.75		BLS/Hr Proc			bbl/hr
DOLONII / TOCCO		470.70	- Vullaiauvo I	JDE0/11 1 100	coocu.	077.0	DDMII
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Adam	Pollard	07:00		100	6.89	1.89
Crew	Ker	Erler	09:00		100	7.03	1.45
	Ra	y Lee	11:00		100	7.09	1.76
	Eddy N	/IcGruder	13:00		100	6.97	1.94
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	213	899	686	YES
			Sodium Hydroxide	295	1,133	838	YES
Visitors:	BO JA	CKSON					
Visitors:	·						
Visitors:					<u> </u>		
ere there any abnom	nal operatio	onal issues onsite	2			A. CORR.	
e there any addition	al supplies	equipment neede	d? If so, what items and w	vhen?			
)	hanges to t	he current schedu	ile, including volumes ne		?	XTO	

Date:	6/25/2012		Report	Number:		20
			Unit N	lumber:		8
Client:	хто		s .	hift Onsite Time:	6:00	am/pm
Location:	Nash 29		S	hift Offsite Time:	5:00 PM	am/pm
Site Contact:	Bo Jackson				11	Total hrs.
Site Contact:	Paul Worley		Present	Onsite Activities:	F	PROCESS WATER
Processing Hrs T	oday: 4 hrs	Cumulativ	e Processing	Hrs:		75 hrs
BBLS Processed T		Cumulative	BBLS Proces	ssed:		25,632 bbls
BBLS/Hr Proces	sed: 362.5	Cumulative	BBLS/Hr Proc	essed:		341.8 bbl/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Adam Pollard	07:00		100	6.97	1.67
Crew	Ken Erler	09:00		100	7.13	1.89
ļ	Ray Lee	11:00		100	6.89	1.45
	Eddy McGruder	12:30		100	6.57	1.72
<u> </u>		N/A		N/A	N/A	N/A
<u> </u>		N/A		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Order
L_		HcL Acid	115	5,686	5,571	RECEIVED 5000 GALS
Visitors:	BO JACKSON	Sodium Hydroxide	150	220	70	YES
Visitors:	DO JACKSON	_				
Visitors:						
re there any abnorr	nal operational issues on	site?				
there any addition	al supplies/equipment ne	eded? If so, what items and	when?			
	hanges to the current sch	nedule, including volumes ne	eded by client	2		
e there been any c						
	y operational feedback (p	ositive or negative)? Company:			רצ	
client provided an	y operational feedback (p				x1	

Date:	6/2	6/2012		Report	Number:		21
					lumber:		8
Client:)	кто		S	hift Onsite Time:	6:00	am/pm
Location:	Na	sh 29		SI	nift Offsite Time:	5;00 PM	am/pm
Site Contact:		ackson				0	Total hrs.
Site Contact:		Worley		Present	Onsite Activities:	PROCE	SS WATER
MAINTENAI	VCE						
Processing Hrs		0 hrs		e Processing		75	hrs
BBLS Processed		1,450 bbls		BBLS Proces			32 bbls
BBLS/Hr Procei	ssed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	341.8	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator			N/A	**************************************	N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	5,686	5,686	CEIVED 5000
			Sodium Hydroxide	0	1,000	1,000	YES
Visitors:	BO JA	CKSON					
Visitors:							
Visitors:							
Vere there any abnor			d? If so, what items and v	vhen?			
O ave there been any o	changes to t	he current sched	ule, including volumes ne	eded by client			
ave there been any o			tive or negative)?	eded by client			
10				eded by client		хто	

Date:	6/2	7/2012		Report	Number:		22
			'	FOURTH CO.	Number:		8
Client:		(TO	1			****	
Location:		sh 29		The state of the s	hift Onsite Time:	6:00	am/pm
Site Contact:		ackson		S	hift Offsite Time:	5:00 PM	am/pm
Site Contact:		Worley		0		0	Total hrs.
		· · · · · · ·		Present	Onsite Activities:	PROCE	ESS WATER
Processing Hrs To	day:	0 hrs	Cumulatio	e Processing	<i>0</i>	7.5	
BBLS Processed To		1,450 bbls	Cumulativ	BBLS Proces	rus.	75	
BBLS/Hr Process	ed:	#DIV/0!		BBLS/Hr Proce			532 bbls
					coocu,	341.	8 bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			N/A	Section of the Control of the Contro	N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
<u> </u>			**************************************				
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	5,686	5,686	CEIVED 5000 G
Visitors:	BO IA	OKCON	Sodium Hydroxide	0	1,000	1,000	YES
Visitors:	BO JA	CKSON					
Visitors:							
re there any abnorma	l operation	nal issues onsite	7	TO THE STATE OF		usin California	
					A STATE OF THE STA		
there any additional	supplies/e	quipment needed	1? If so, what items and w	hen?	Salah Virginia (Salah)	C SENERGE	001 N ST 1000 2110 W 1 1 1
		e current schedu	le, including volumes nee	ded by client?		2.	
e there been any cha	nges to the	T THE !! OU! OU! OU!		7		1.35 SHEET S	
e there been any cha	nges to the						
e there been any cha	nges to the						
client provided any			ve or negative)?			2 24 24 25	Bartis Salamon ay sal.
						ХТО	
client provided any			ve or negative)?			XTO	Marketina varyal
client provided any	perational		ve or negative)?			XTO	

Date:	6/28	3/2012		Report	Number:		23
		***************************************		Unit N	umber:		8
Client:		то		ei.	nift Onsite Time:	N/A	am/pm
Location:		sh 29			ift Offsite Time:	N/A	am/pm
Site Contact:		ackson		413.00	int Onsite time.	0	Total hrs.
Site Contact:		Worley		Present (Onsite Activities:		SS WATER
STAND BY				3.2			
Processing Hrs		0 hrs	Cumulativ	e Processing I	irs:	75	hrs
BBLS Processed	Today:	1,450 bbls	Cumulativ	e BBLS Proces	sed:	25,6	32 bbls
BBLS/Hr Proces	ssed:	#DIV/0!	Cumulative	BBLS/Hr Proce	essed:	341.8	B bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
<u> </u> -			N/A		N/A	N/A	N/A
	-		Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	5,686	5,686	CEIVED 5000
			Sodium Hydroxide	0	1,000	1,000	YES
Visitors:	BO JA	ACKSON				han Winner Inc.	
Visitors:				ļ		·····	ļ
	mal operatio	onal issues onsite					
Vere there any abnor			r?	when?			
10							
lave there been any	changes to t	he current sched	ule, including volumes ne	eeded by cilent	?		
las client provided a	ny operation	ial feedback (posi	tive or negative)?			No Reversion	
ido olione providou d			Company:			XTO	
Person:							

Date:	6/2	9/2012		Report	Number:		24
iniiniiniiniinaa qa, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					lumber:		8
Client:)	хто		S.	nift Onsite Time:	N/A	am/pm
Location:	Na	ash 29		SI	nift Offsite Time:	N/A	am/pm
Site Contact:	Во	Jackson				0	Total hrs.
Site Contact:		Worley		Present	Onsite Activities:	PROCE	SS WATER
STAND BY	(
Processing Hrs	Today:	0 hrs	Cumulativ	e Processing	Hrs:	75	hrs
BBLS Processed	l Today:	1,450 bbls	Cumulative	BBLS Proces	sed:	25,€	32 bbls
BBLS/Hr Proce	essed:	#DIV/0!	Cumulative l	BBLS/Hr Proc	essed:	341.	8 bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
-			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	5,686	5,686	CEIVED 5000
Vn. (4		101/001	Sodium Hydroxide	0	1,000	1,000	YES
Visitors:	BO J/	ACKSON				***************************************	
Visitors:							
Vere there any abno	rmal operati	onal issues onsite	American de la companya de la compa				
	onal supplies	/equipment neede	d? If so, what items and v	vhen?			
O ave there been any			d? If so, what items and v		?		200 (100 (100 (100 (100 (100 (100 (100 (
lave there been any	changes to	the current sched	ule, including volumes ne				
lave there been any	changes to	the current sched	ule, including volumes ne		2	XTO	
lave there been any	changes to	the current sched	ule, including volumes ne tive or negative)?			XTO	

Date:	6/30	/2012		Report	: Number:		25
	,	·	•		Number:		8
Client:	X	то		S	hift Onsite Time:	N/A	am/pm
Location:	Nas	sh 29		S	hift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja	ackson				0	Total hrs.
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCI	ESS WATER
STAND BY							
Processing Hrs To		0 hrs		ve Processing		75	
BBLS Processed To		0 bbls	**************************************	re BBLS Proces			632 bbls
BBLS/Hr Process	ed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	341	.8 bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A	ļ	N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	120	5,686	5,566	CEIVED 5000
			Sodium Hydroxide	100	1,000	900	YES
Visitors:	BO JA	CKSON					
Visitors:							
Visitors:		· , ,					
	" /' 						
Vere there any abnorm	al operatio	nal issues onsit	e?				
are there any additiona	supplies/	equipment need	ed? If so, what items and	when?			
		na current echa	fule, including volumes n	eeded by client	3		
	anges to t	ie carrent schet					
10			sitive or negative)?				
			uitive or negative)?			ХТО	
IO						XTO	

Date:	7/1/2012		Report	Number:		26
	77172012			lumber:		8
Client:	XTO			hift Onsite Time:	3:00	T/
Location:	Nash 29			hift Offsite Time:	9:30 PM	am/pm am/pm
Site Contact:	Bo Jackson			mit Offsite fiffe.	6 6	Total hrs.
Site Contact:	Paul Worley		Present	Onsite Activities:		SS WATER
Processing Hrs	Today: 6 hi	s Cumulati	ve Processing	Hrs:	81	hrs
BBLS Processed	Today: 1,650 b	ols Cumulativ	ve BBLS Proces	ssed:	28,9	32 bbis
BBLS/Hr Proce	ssed: 275	Cumulative	BBLS/Hr Proc	essed:	357.	2 bbl/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator	RAY LEE	0500		100	6.67	0.87
Crew	EDDIE MCGRUBER	0700	1	100	6.73	0.98
<u></u>		0900		100	6.91	1.03
		N/A		N/A	N/A	N/A
_		N/A		N/A	N/A	N/A
<u> </u>		N/A	<u> </u>	N/A	N/A	N/A
-		Chemical	Usage	Start Inv.	End Inv.	On Order
		HcL Acid	120	5,686	5,566	CEIVED 5000
_		Sodium Hydroxide	100	1,000	900	YES
Visitors:						
Visitors:						
Visitors:						
Vere there any abnor	mal operational issues	onsite?				
	nal supplies/equipment	needed? If so, what items and	when?			
0						
0		schedule, including volumes n	eeded by client	7		**************************************
O ave there been any		schedule, including volumes n	eeded by client			
O ave there been any O as client provided a	changes to the current	(positive or negative)?	eeded by client			
o ave there been any	changes to the current		eeded by client		XTO	
ave there been any as client provided a Person:	changes to the current ny operational feedbac	(positive or negative)?	eeded by client	200 Hard State (1984)	XTO	

Date:	7/2/	2012		Report	Number:		27
				Unit N	lumber:		8
				p 			
Client:		ТО			nift Onsite Time:	N/A	am/pm
Location:		h 29		SI	nift Offsite Time:	N/A	am/pm
Site Contact:		ickson				0	Total hrs
Site Contact:	Paul \	Norley		Present (Onsite Activities:	PROCES	S WATER
STAND BY					**************************************	7.	
Processing Hrs Toda		0 hrs		re Processing		75	hrs
BBLS Processed Tod BBLS/Hr Processed		0 bbls	***************************************	BBLS Proces			2 bbls
BBLS/Hr Processed		#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	341.8	bbl/hr
Lead Supervisor:	Paul \	Norley	Readings:	flow back	Volts/Amps	pН	Turbidit
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,556	5,556	
Visitors:	BO IA	ckson	Sodium Hydroxide	0	900	900	
Visitors:	BC 370	UNOUN					
Visitors:		· · · · · · · · · · · · · · · · · · ·					
Vere there any abnormal	operatio	nal issues onsit	97 M.				
ve there any additional s	upplies/e	equipment need	ed? If so, what items and v	when?			
o			ed? If so, what items and v		S manner		
lave there been any char	iges to th	e current sched	ule, including volumes ne				
O ave there been any char O	iges to th	e current sched	ule, including volumes ne			XTO	
lave there been any char	iges to th	e current sched	ule, including volumes ne			AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	

Date:	7/3	/2012		Report	Number:		28
					umber:		8
Client:	X	TO		Sh	ift Onsite Time:	N/A	am/pm
Location:	Nas	sh 29		Sh	ift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja	ackson		iest die	12.70	0	Total hr
Site Contact:	Paul	Worley		Present (Insite Activities:	PROCES	S WATER
STAND BY							
Processing Hrs To	day:	0 hrs	Cumulativ	e Processing I	irs:	75	hrs
BBLS Processed To	oday:	0 bbls		BBLS Proces	-		2 bbls
BBLS/Hr Process	ed:	#DIV/0!		BBLS/Hr Proce			bbl/hr
Land Companies v.	David	Marley	~		· · · · · · · · · · · · · · · · · · ·		- 1 · b.
Lead Supervisor: Lead Operator	Paul	Worley	Readings:	flow back	Volts/Amps	pH	Turbidit
Crew			N/A N/A		N/A	N/A	N/A
CIEVY			N/A N/A		N/A	N/A	N/A
-			N/A N/A		N/A	N/A	N/A
			N/A N/A		N/A N/A	N/A	N/A
	· · · · · · · · · · · · · · · · · · ·		N/A		N/A N/A	N/A N/A	N/A N/A
			(N/A		IN/A	IN/ M	IV/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,566	5,566	
			Sodium Hydroxide	0	900	900	
Visitors:	BO JA	CKSON					
Visitors:							
Visitors:							
/ere there any abnorm ○	al operatio	nal issues onsite	7 Old States				
	supplies/e	equipment neede	d? If so, what items and v	vhen?			
re there any additiona							
0	anges to th	ne current schedu	Jle, including volumes пе	eded by client?			
O ave there been any ch	anges to th	ne current schedu	ale, including volumes ne	eded by client?		2.7	
lave there been any ch				eded by client?			
O ave there been any ch				eded by client?		XTO	
O ave there been any ch O as client provided any			tive or negative)?	eded by client?		XTO	

Date:	7/4/2	2012		Report	Number:		29
					lumber:		8
Client:	XT	0		S S	hift Onsite Time:	N/A	am/pm
Location:	Nasi	h 29		S	nift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja			100000		0	Total hrs
Site Contact:	Paul V	Vorley	ļ	Present	Onsite Activities:	PROCES	SS WATER
STAND BY	STANGER MILLAND						
Processing Hrs Tod		0 hrs		e Processing		75	hrs
BBLS Processed Too		0 bbls	****	BBLS Proces			32 bbls
BBLS/Hr Processed	d:	#DIV/0!	Cumulative I	BBLS/Hr Proc	essed:	341.8	bbl/hr
Lead Supervisor:	Paul V	Vorley	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A	_	N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,566	5,566	
			Sodium Hydroxide	0	900	900	
Visitors:	BO JAC	KSON					
Visitors:		····					
Visitors:							
Vere there any abnormal	operation	al issues onsite	97				
0					***************************************		**************************************
10							
10						······	
			9 2-1, 2 900000000000000000000000000000000000	<u>.</u>			
re there any additional s	supplies/ed	quipment needs	ed? If so, what items and w	vhen?			Section :
	supplies/ed	quipment neede	ed? If so, what items and w	vhen?			
re there any additional s	supplies/ed	quipment neede	ed? If so, what items and w	vhen?			
are there any additional s							
re there any additional s O ave there been any chai			ed? If so, what items and w		Parameters in	100 May 100 Ma	
re there any additional s O ave there been any chai					Parameters in		
re there any additional s ○ ave there been any chai					Particular of the second of th		
re there any additional s O ave there been any char	nges to the	e current sched	ule, including volumes ne		Paragraphy 1	SAME OF THE SAME O	
re there any additional s	nges to the	e current sched	ule, including volumes ne		Paralle and American	Salaha atr	and the same of th
re there any additional s ave there been any char as client provided any o	nges to the	e current sched	ule, including volumes ned			Salide St.	

Date:	7/5/	/2012			t Number:		30
				Unit	Number:		8
Client:	X	то			Shift Onsite Time:	N/A	am/pm
Location:	Nas	sh 29		Š	hift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja	ackson				0	Total hrs.
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCE	SS WATER
STAND BY							
Processing Hrs Tod	ay:	0 hrs	Cumulativ	e Processing	Hrs:	75	hrs
BBLS Processed Too	lay:	0 bbls	Cumulative	BBLS Proce	ssed:	25,6	32 bbls
BBLS/Hr Processe		#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	341.8	bbl/hr
Lond Connection	Doub	Maria		B. L. at	1 1/1/1/		- 1×15
Lead Supervisor: Lead Operator	Paul	Worley	Readings: N/A	flow back	Volts/Amps	pH N/A	Turbidity
Crew			N/A N/A		N/A N/A	N/A N/A	N/A N/A
CICVY			N/A N/A		N/A	N/A N/A	N/A N/A
			N/A	 	N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
					14/5	14774	1
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	5,566	5,566	
			Sodium Hydroxide	0	900	900	
Visitors:	BO JA	CKSON	,				
Visitors:							
Visitors:							
		nal legues oneit					
Were there any abnorma	operation	ildi issuus Viisik	97	1 27 100,000,00			
Were there any abnorma NO	operatio	nar issues Unsit	<u> </u>				
	operation	inur issues Oriono				,	
	operation						
	operation		96				***************************************
NO Are there any additional s			ed? If so, what items and v			Supply State of the Control of the C	
NO							The Control of States
NO Are there any additional s							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NO Are there any additional s	supplies/e	equipment needs	ed? If so, what items and v	vhen?			
Are there any additional s	supplies/e	equipment needs		vhen?			
NO Are there any additional s	supplies/e	equipment needs	ed? If so, what items and v	vhen?			
Are there any additional s	supplies/e	equipment needs	ed? If so, what items and v	vhen?			Sidelic
Are there any additional s NO Have there been any cha	supplies/e	equipment needs	ed? If so, what items and v	vhen?			
Are there any additional in NO Have there been any chance the NO Has client provided any controls the No	supplies/e	equipment needs	ed? If so, what items and vule, including volumes near itive or negative)?	vhen?			Side
Are there any additional in NO Have there been any chance the control of the NO Has client provided any control of the North Area of the	supplies/e	equipment needs	ed? If so, what items and v	vhen?		XTO	
Are there any additional in NO Have there been any chance the NO Has client provided any controls the No	supplies/e	equipment needs	ed? If so, what items and vule, including volumes near itive or negative)?	vhen?		XTO	
Are there any additional in NO Have there been any chance the control of the NO Has client provided any control of the North Area of the	supplies/e	equipment needs	ed? If so, what items and vule, including volumes near itive or negative)?	vhen?		XTO	

Date:	7/6/	2012		Report	Number:		31
					umber:		8
Client:		ТО			nift Onsite Time:	N/A	am/pm
Location:		h 29		Sł	ift Offsite Time:	N/A	am/pn
Site Contact:		ckson		51	S	0	Total hr
Site Contact:	Paul	Vorley		Present (Onsite Activities:	PROCES	SS WATER
Processing Hrs Too	day: T	0 hrs	Cumulativ	e Processing I	Jre:	75	hrs
BBLS Processed To		0 bbls		BBLS Proces			32 bbls
BBLS/Hr Processe	*****	#DIV/0!		BLS/Hr Proce			bbl/hr
Lead Supervisor:	Paul \	Vorley	Readings:	flow back	Volts/Amps	На	Turbidit
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
<u> </u>			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Ord
			HcL Acid	0	5,566	5,566	
Visitors:	BO IA	CKSON	Sodium Hydroxide	0	900	900	
Visitors:	BO JAC	2K2ON					
Visitors:	***************************************						
Vere there any abnorma	al operation	nal issues onsiti	87 (Sec. 1)		de Valenda et de la		
0		***				······	
re there any additional	supplies/e	quipment need	ed? If so, what items and v	rhen?	7.485 (All LLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLL		
re there any additional			ed? If so, what items and w		7		
re there any additional O ave there been any cha	anges to th	e current sched	lule, including volumes ne			XTO	

Date:	7/7.	/2012		Report	Number:		32
					umber:		8
Client:	×	то		Sl	nift Onsite Time:	N/A	am/pm
Location:	Nas	sh 29		St	ift Offsite Time:	N/A	am/pm
Site Contact:	Bo Ja	ackson				0	Total hrs
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	S WATER
STAND BY							
Processing Hrs Tod	ay:	0 hrs	Cumulativ	e Processing	Hrs:	75	hrs
BBLS Processed Tod	lay:	0 bbls	Cumulative	e BBLS Proces	sed:	25,63	2 bbls
BBLS/Hr Processed	d:	#DIV/0!	Cumulative	BBLS/Hr Proce	essed:	341.8	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,566	5,566	
			Sodium Hydroxide	0	900	900	
Visitors:	BO JA	CKSON					
Visitors:							
		mal tanuanti					
	i operatio	nal issues onsite	9?				
Vere there any abnormal NO Are there any additional s			e? ed? If so, what items and v				
re there any additional s	supplies/	equipment neede		when?			
re there any additional s	supplies/	equipment neede	ed? If so, what items and v	when?	Pr		
io tre there any additional s to tave there been any chai	supplies/	equipment needs	ed? If so, what items and v	when?	•		
io tre there any additional s to tave there been any chai	supplies/	equipment needs	ed? If so, what items and v	when?		XTO	
are there any additional s IO lave there been any chai	supplies/	equipment needs	ed? If so, what items and value, including volumes ne	when?		XTO	

Date:	7/8/	2012		Report	Number:		33
				Unit N	lumber:		8
			1	_		21/4	, ,
Client:	X1				hift Onsite Time:	N/A	am/pm
Location: Site Contact:		h 29) j	nift Offsite Time:	N/A 0	am/pm Total hrs
Site Contact:		ckson Vorley		Present i	Onsite Activities:		SS WATER
STAND BY		· · · · · · ·	1				
Processing Hrs To	day:	0 hrs	Cumulativ	e Processing	Hrs:	75	hrs
BBLS Processed To	oday:	0 bbls	Cumulativ	BBLS Proces	ssed:	25,63	32 bbls
BBLS/Hr Process	ed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	341.8	bbl/hr
Lead Supervisor:	Paul V	Vorley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			N/A		N/A	N/A	N/A
Crew			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
<u></u>			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
		· · · · · · · · · · · · · · · · · · ·	Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid Sodium Hydroxide	0	5,566 900	5,566 900	
Visitors:	BO JAC	CKSON	30didiii riydroxide	<u> </u>	300	300	1
Visitors:							
Visitors:							
Vere there any abnorm	al operation	nal issues onsit	e?	era de loi a de la			
0							
25 C - 25	I supplies/e	quipment need	ed? If so, what items and i	wnen?			
re there any additiona							
re there any additiona							
0	rangee to th	a current echa	fule including volumes as	eded by client	2		
10	anges to th	e current sched	dule, including volumes ne	eded by client	?		
O avé there been any ch	anges to th	e current sched	dule, including volumes ne	eded by client	?		
O ave there been any ch				eded by client	?	and the second s	
O avé there been any ch				eded by client	?	XTO	
o ave there been any ch o as client provided any			sitive or negative)?	eded by client	?	XTO	

Date:	7/9/2012		Report	Number:		34
	77372012		******************************	lumber:		8
Client:	XTO		C	hift Onsite Time:	6:00	am/pm
Location:	Nash 29	 		nift Offsite Time:	6:00 PM	am/pm
Site Contact:	Bo Jackson		*		4	Total hrs
Site Contact:	Paul Worley		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs T			e Processing		85	hrs
BBLS Processed 1			BBLS Proces			5 bbls
BBLS/Hr Proces	sed: 412.5	Cumulative	BBLS/Hr Proc	essea:	358.9	bbl/hr
Lead Supervisor:	Paul Worley	Readings:	flow back	Volts/Amps	рH	Turbidit
Lead Operator	ADAM POLLARD	0200		100	6.35	1.16
Crew	REGGIE WHITE	0400		100	6.65	0.57
	CHRIS ONEAL	0500		100	6.9	0.78
		N/A		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
<u> </u>		N/A		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	150	5,566	5,416	
_		Sodium Hydroxide	130	900	770	YES
Visitors:	BO JACKSON					
Visitors:	BO WELLS					
Visitors:						
	nal operational issues	onsite?				
O		needed? If so, what items and v	when?			
0	al supplies/equipment	needed? If so, what items and v		2		
re there any addition ave there been any co	al supplies/equipment	schedule, including volumes ne (positive or negative)?				
re there any addition ave there been any compared are client provided are person:	al supplies/equipment	schedule, including volumes ne			XTO	
re there any addition ave there been any co	al supplies/equipment	schedule, including volumes ne (positive or negative)?		?	Documents of the National Control of the National Cont	ALTERNATION OF THE PROPERTY OF
re there any addition ave there been any compared are client provided are person:	al supplies/equipment of the current supplies to the c	schedule, including volumes ne (positive or negative)?		?	XTO	

Date:	7/1	0/2012		Report	Number:		35
	,,, ±,	5,2012			lumber:		8
Client:)	(ТО		SI	hift Onsite Time:	6:00	am/pn
Location:	Na	sh 29		Sł	nift Offsite Time:	6:00 PM	am/pn
Site Contact:	Bo J	ackson				8	Total hr
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs T	oday:	8 hrs	Cumulativ	e Processing	Hrs:	93	hrs
BBLS Processed 1		3,363 bbls		BBLS Proces		33.86	8 bbls
BBLS/Hr Proces		420.375		BBLS/Hr Proce			bbl/hr
				•			
Lead Supervisor:		Worley	Readings:	flow back	Volts/Amps	pH 7.1	Turbidi
Lead Operator		POLLARD	800		100	7.1	1.34
Crew		E WHITE	1000		100	6.89	1.22
-	CHRIS	SONEAL	1200		100	6.65	0.98
			1400		100	6.65	1.35
 			0:00		N/A	N/A	N/A
-			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	200	5,416	5,216	
			Sodium Hydroxide	185	770	585	YES
Visitors:						<u></u>	
Visitors:	BO \	WELLS					
Visitors:							
/ere there any abnorr	mal operatio	onal issues onsite	7	o ij vysa vidalias žvenjanas			
/ere there any abnorr ○			? d? If so, what items and v	vhen?		Allen Allen .	
ere there any abnorr	al supplies	equipment neede			?	THE PERSON NAMED IN	
re there any addition	al supplies. hanges to t	equipment neede	d? If so, what items and v ule, including volumes ne				
re there any addition ave there been any c as client provided an	al supplies. hanges to t	equipment neede	d? If so, what items and v ule, including volumes ne tive or negative)?		?		
re there any addition	al supplies. hanges to t	equipment neede	d? If so, what items and v ule, including volumes ne			Selection of the select	79 PF 1
re there any addition ave there been any compared any co	al supplies. hanges to t	equipment neede	d? If so, what items and v ule, including volumes ne tive or negative)?				
re there any addition ave there been any compared any co	al supplies. hanges to t	equipment neede	d? If so, what items and v ule, including volumes ne tive or negative)?				

Date:	7/1	1/2012		Report	Number:		36
	.,,-				lumber:		8
Client:	>	кто		S	hift Onsite Time:	6:00	am/pm
Location:		sh 29		S	hift Offsite Time:	6:00 PM	am/pm
Site Contact:		lackson		Survey		4	Total hrs
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs T	oday:	4 hrs	Cumulativ	re Processing	Hrs:	97	hrs
BBLS Processed	Today:	1,980 bbls	Cumulativ	e BBLS Proces	ssed:	35,84	8 bbls
BBLS/Hr Proces	sed:	495	Cumulative	BBLS/Hr Proc	essed:	369.6	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		POLLARD	800		100	6.85	1.67
Crew	CHRIS	SONEAL	1000		100	6.76	1.55
			1200		100	6.9	1.89
			1400		100	6.85	1.66
			0:00		N/A	N/A	N/A
	-		0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	235	5,416	5, 1 81	
			Sodium Hydroxide	205	3,800	3,595	
Visitors:							
Visitors:	BO \	WELLS					
Visitors:							
	A						
<mark>'ere there any abnom</mark> ○	nal operation	onal issues onsite	?				
•							
ra there any addition	al eunaliae	loguinment neede	d? If so, what items and	uhon?			5.00 SANON AND AND AND AND AND AND AND AND AND AN
O addition	ai supplies	equipment needed	ur ii so, what items and	Wilelit			
ave there been any c	hanges to t	he current schedu	ile, including volumes ne	eded by client	?		
0							
	v operation	al feedback (posit	ive or negative)?	January of Control			
as client provided an	,			Pedd I Viceosias Company	O WHILLIAM V	XTO	2005 N. 111 T. 22.55
as client provided an			Company.				
as client provided an Person:			Company:			XIO	

Date:	7/:	12/2012		Report	Number:	3	37
		The state of the s		January de la 	lumber:		8
Client:		хто		9	hift Onsite Time:	6:00	am/pm
Location:		ash 29			nift Offsite Time:	8:00 PM	am/pm
Site Contact:		Jackson		3,	ine Offaite Fiffic.	8	Total hrs
Site Contact:		ul Worley		Present (Onsite Activities:		S WATER
Processing Hrs 1	The second secon	8 hrs		e Processing		105	hrs
BBLS Processed	*****	3,362 bbls	**************************************	BBLS Proces	manusiakinaka va 6.6 do od		0 bbis
BBLS/Hr Proces	sed:	420.25	Cumulative I	BBLS/Hr Proce	essed:	373.4	bbl/hr
Lead Supervisor:	PAUL	WORLEY	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		POLLARD	800	20.83.88.330.88. 777 7	110	7.1	2.56
Crew		IS ONEAL	1000		110	7.43	1.89
	REGO	GIE WHITE	1200		110	6.67	0.98
			1400		110	6.63	1.45
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	355	5,181	4,826	
			Sodium Hydroxide	420	3,595	3,175	
Visitors:							
Visitors:	BO	WELLS					
Visitors:							
06(04446/81): 15-3303434A7675							
e there any addition			d? If so, what items and v	vhen?	73.00 (19 m) (19	- 1000 - 1000	
ove there been any c	al supplies	s/equipment neede the current schedu	d? If so, what items and w		?		THE S.S.
e there any addition ive there been any c	al supplies	s/equipment neede the current schedu	d? If so, what items and w		? VIII BARRET	XTO	
e there any addition ive there been any c	al supplies	s/equipment neede the current schedu	d? If so, what items and water		2 ************************************	6.	
e there any addition ve there been any c sclient provided an Person:	al supplies changes to ny operatio	s/equipment neede the current schedu	d? If so, what items and water		?	6.	
e there any addition ive there been any c s client provided an Person: A Additional Comm	changes to	s/equipment neede the current schedu nal feedback (posi	d? If so, what items and water	eded by client	7:00 AM WE FIL	XTO LED CLEAN T	
e there any addition ave there been any compared are person: A Additional Commerce of the compared of the c	changes to	s/equipment neede the current schedu nal feedback (posi	d? If so, what items and water the second se	eded by client	7:00 AM WE FIL DWN ONXTO TRA	XTO LED CLEAN TANFER PUMP	WENT DO

Date:	7/1	3/2012	Г	Report	Number:	3	8
		.5, 2512		••••••	umber:		3
Client:		XTO		SI	nift Onsite Time:	2:00	am/pm
Location:	Na	ash 29		St	ift Offsite Time:	7:00 PM	am/pm
Site Contact:	Во	Jackson				10	Total hrs
Site Contact:	Pau	il Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs	Today:	10 hrs	Cumulative	Processing	Hrs:	107	hrs
BBLS Processed		4,704 bbls		BBLS Proces	······································	40,55	2 bbls
BBLS/Hr Proce		470.4	Cumulative E	BLS/Hr Proce	essed:	379.0	bbl/hr
Lead Supervisor:	DALIL	WORLEY	Davilore	flow back	Volte / Amne	ا بام	Turbidit
Lead Operator		POLLARD	Readings: 800	HOW DOCK	Volts/Amps 110	pH 7,21	0.76
Crew		S ONEAL	1000		110	6.87	0.70
CICV		SIE WHITE	1200		110	6.95	1.24
			1400		110	6.34	2.34
F			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
L			HcŁ Acid	345	5,181	4,836	
			Sodium Hydroxide	380	3,595	3,215	
Visitors:	***************************************						
Visitors:							
Visitors:						L	
Vere there any ahno	rmal operati	onal issues onsite	.7				148.00
Vere there any abno			ed? If so, what items and w	hen?			
re there any addition	onal supplies	s/equipment neede the current sched	ed? If so, what items and w		2 mention of the control of the cont	**************************************	
re there any addition	onal supplies	s/equipment neede the current sched	ed? If so, what items and w ule, including volumes nee itive or negative)?			XTO	

Date:	7/14/2	2012		Report	Number:		39
					lumber:		8
CUA-I			ı	•	LA O	5.00	
Client:	XT(Nash				hift Onsite Time:	5:00	am/pn
Location: Site Contact:	Nasn Bo Jac			3	hift Offsite Time:	7:00 PM 10	am/pr Total hi
Site Contact:	Paul W			Present	Onsite Activities:		S WATER
Site Contact.	rauivv	oriey	i	Fleseit	Orisite Activities	FROOLE	O WAILK
Processing Hrs T	oday:	10 hrs	Cumulativ	e Processing	Hrs:	117	hrs
BBLS Processed	Foday:	4,321 bbls	Cumulative	BBLS Proces	ssed:	44,84	3 bbls
BBLS/Hr Proces	sed:	432.1	Cumulative I	BBLS/Hr Proc	essed:	383.3	bbl/hr
Lead Supervisor:	PAUL WO	DRLEY	Readings:	flow back	Volts/Amps	рН	Turbidi
Lead Operator	ADAM PC		800		100	7.24	0.89
Crew	CHRIS C		1000		100	6.98	1.31
	REGGIE		1200		100	6.54	1.87
			1400		100	6.88	1.63
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Ord
			HcL Acid	380	5,181	4,801	
			Sodium Hydroxide	410	3,595	3,185	
Visitors:	LARRY (ONEAL					
Visitors:							
Visitors:							
re there any abnor			? d? If so, what items and v	vhen?			
ave there been any o	hanges to the	current schedu	ule, including volumes ne	eded by client	?		
as client provided ar Person:	ny operational	feedback (posi	tive or negative)? Company:			хто	

Client: XTO Location: Nash 29 Site Contact: Bo Jackson Processing Hrs Today: 9 hrs Site Contact: Processed: 149,116 bits Site Contact: Bo Jackson Site Contact Site Site Site Site Site Site Site Sit	Date:	7/1	15/2012		Report	Number:		40
Cilent: XTO Shift Onsite Time: 6:00 an/pm			3,2012					
Shift Offsite Time								
Shift Offsite Time	Client:		хто		S	hift Onsite Time:	6:00	am/pm
Site Contact: Bo Jackson Paul Worley Present Onsite Activities. PROCESS WATER Processing Hrs Today: 9 hrs BBLS Processed: 49,116 bbls BBLSHr Processed: 474,777778 Lead Supervisor: PAUL WORLEY Lead Supervisor: PAUL WORLEY Lead Operator ADAM POLLARD Crew CHRIS ONEAL 1000 100 6.56 1.97 Lead Supervisor: PAUL WORLEY Lead Supervisor: PAUL WORLEY Lead Supervisor: PAUL WORLEY Lead Operator ADAM POLLARD 1000 100 6.56 1.97 REGGIE WHITE 1200 100 6.87 1.88 1400 100 6.93 1.53 Lead Supervisor: PAUL WORLEY 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 100 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 6.56 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1.97 Reddings: flow back Volts/Amps pH Turbidity 1000 1000 1000 1.97	Location:	Na	ash 29		SI	nift Offsite Time:	6:00 PM	
Processing Hrs Today: 9 hrs BBLS Processed: 126 hrs BBLS Processed: 49,116 bbls BBLS Processed: 474,7777778 Cumulative BBLS Processed: 49,116 bbls Cumulative BBLS/Hr Processed: 389,8 bbl/hr BBLS/H	Site Contact:	Во	Jackson				9	
BBLS/Hr Processed: 47.176 bbls BBLS/Hr Processed: 474.777778 Lead Supervisor: PAUL WORLEY Lead Operator ADAM POLLARD Crew CHRIS ONEAL REGGIE WHITE 1000 100 6.57 1.65 1.69 1.200 100 6.87 1.88 1.200 100 6.93 1.53 1.400 100 100 6.93 1.53 1.400 100 6.93 1.53 1.400 100 100 6.93 1.53 1.400 100 100 6.93 1.400 100 100 6.93 1.53 1.400 100 100 6.93 1.400 100 100 6.93 1.400 100 100 6.93 1.400 100 100 6.93 1.400 100 100 100 100 1.400 100 100 100 1.400 100 100 100 1.400 100 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.400 100 100 1.40	Site Contact:	Pau	il Worley		Present	Onsite Activities:	PROCES	S WATER
BBLS Processed Today: 4,273 bbls BBLS/Hr Processed: 474.777778 Lead Supervisor; PAUL WORLEY Lead Operator ADAM POLLARD Crew CHRIS ONEAL REGGIE WHITE 1000 100 6.56 1.97 1.88 1400 100 6.93 1.53 1400 100 6.93 1.53 1400 100 6.93 1.53 1400 100 6.93 1.53 1500 N/A N/A N/A N/A N/A 0:00 N/A N/A N/A N/A N/A 0:00 N/A N/A N/A N/A N/A Wisitors: LARRY ONEAL Visitors: LARRY ONEAL Visitors: Visito					·			
Lead Supervisor:					-			
Lead Supervisor:		······						
Lead Operator	BBLS/Hr Process	sed:	474.7777778	Cumulative	BBLS/Hr Proc	essed:	389.8	bbl/hr
Lead Operator	Lead Supervisor	PALII	WORLEY	Readings	flow back	Valts/Amas	nH	Turbidity
Crew CHRIS ONEAL REGGIE WHITE 1200 100 6.56 1.97 1.88 1400 100 6.93 1.53 0.00 N/A	······································				HOW DUCK			
REGGIE WHITE 1200 100 6.87 1.88 1400 100 6.93 1.53 0:00 N/A N/A N/A N/A N/A N/A N/A N								
1400								
O:00 N/A N/A N/A N/A O:00 N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. HcL Acid 320 4,801 4,481 Sodium Hydroxide 385 3,185 2,800 Visitors: Visitors: Visitors: Visitors: Were there any abnormal operational issues onsite? NO Are there any additional supplies/equipment needed? If so, what items and when? NO Are there been any changes to the current schedule, including volumes needed by client? NO Has client provided any operational feedback (positive or negative)? Person: Company: XTO Additional Comments Additional Comments RRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL				***************************************		 		
O:00 N/A N/A N/A N/A Chemical Usage Start inv. End Inv. On Order HcL Acid 320 4,801 4,481 Sodium Hydroxide 385 3,185 2,800 Visitors: Visitors: Visitors: Visitors: Visitors: Nere there any abnormal operational issues onsite? NO Are there any additional supplies/equipment needed? If so, what items and when? NO Are there been any changes to the current schedule, including volumes needed by client? NO Have there been any changes to the current schedule, including volumes needed by client? NO Additional Comments Additional Comments RERIVED ON LOCATION AT 6.00 AM REVEIWED JSA. STARTED PROCESSING WATER AT 6.15 AM WE HAD TO WAIT SEVERAL								
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HcL Acid 320 4,801 4,481 Sodium Hydroxide 385 3,185 2,800 Visitors: LARRY ONEAL Visitors: Visit				Chemical	Usage	Start Inv.	End Inv.	On Order
Visitors:	<u> </u>							
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Person: Company: XTO N/A Additional Comments ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional IO	at supplies	s/equipment neede	d? If so, what items and \	when?	Parallel State Control of the Contro		
Person: Company: XTO N/A Additional Comments ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional IO	at supplies	s/equipment neede	d? If so, what items and \	when?	Parallel State Control of the Contro		
Person: Company: XTO N/A Additional Comments ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional IO	at supplies	s/equipment neede	d? If so, what items and \	when?	Parallel de la constante de la		
Additional Comments ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSA. STARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional IO	at supplies	s/equipment neede	d? If so, what items and \	when?	2 Contraction of the Contraction		
Additional Comments ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional NO Have there been any chico	al supplies hanges to	r/equipment neede the current schedi	d? If so, what items and value, including volumes ne	when?	**************************************		
ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional NO Have there been any child Has client provided any Person:	al supplies hanges to	r/equipment neede the current schedi	d? If so, what items and value, including volumes ne	when?			
ARRIVED ON LOCATION AT 6:00 AM REVEIWED JSASTARTED PROCESSING WATER AT 6:15 AM WE HAD TO WAIT SEVERAL	Are there any additional NO Have there been any child Has client provided any Person:	al supplies hanges to	r/equipment neede the current schedi	d? If so, what items and value, including volumes ne	when?	**************************************		
	Are there any additional NO Have there been any characteristics and the NO Has client provided any Person:	al supplies hanges to y operation	r/equipment neede the current schedi	d? If so, what items and value, including volumes ne	when?			
JOUNG FOR FURNITED TRANSFER WATER FRUNTOLEAN TANNS TO PIT TANK - PIT PIT CEPAN TANKS AND SHITT DOWN FOR PINS	Are there any additional NO Have there been any change of the NO Has client provided any Person:	al supplies hanges to y operation	s/equipment neede the current schedi nal feedback (posi	d? If so, what items and water and w	when?		хто	

Date:	7/1	6/2012		Report	Number:	4	1
	····	·			lumber:		8
Client:		VTO 1	1	·	hift Onsite Time:	6:00	am/pm
Location:		KTO ash 29			nift Offsite Time:	4:00 PM	am/pm
Site Contact:		Jackson		31	int Onsite Time.	7	Total hrs.
Site Contact:		Worley		Present	Onsite Activities:	t	S WATER
						422	L
Processing Hrs		7 hrs		e Processing		133	hrs
BBLS Processed		3,852 bbls	***************************************	BBLS Proces			8 bbls bbl/hr
BBLS/Hr Proces	sea:	550.2857143	Cumulative	BBLS/Hr Proc	essea:	330.3	DDMIT
Lead Supervisor:	PAUI	WORLEY	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator		SONEAL	800	.,	100	6.35	0.87
Crew		IE WHITE	1000	·····	100	6.43	1.23
		IE WHITE	1200		100	7.12	2.1
<u> </u>			1400		100	6.97	1.87
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	260	4,481	4,221	
			Sodium Hydroxide	285	2,800	2,515	
Visitors:	LARR	Y ONEAL					
Visitors:							·····
Visitors:					1		
Vere there any abnor	mai operau	Olidi issues Olisite			2 2000		
			12 If so what items and v	when?			
re there any addition		leaninnment needel		****		.,.,	
Are there any addition	iai suppiies	lequipment neede					
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NO			ile, including volumes ne	eded by client	?		
NO				eded by client	?		
lo				eded by client	?		
lave there been any	changes to	the current schedu	ile, including volumes ne	eded by client			
lave there been any	changes to	the current schedu	ile, including volumes ne ile, including volumes ne ilve or negative)?	eded by client	?	YIO	
NO	changes to	the current schedu	ile, including volumes ne	eded by client	? X X X X X X X X X X	XTO	

Date:	7/17	7/2012		Report	Number:		42
	.,, .,	7			lumber:		8
Client:	Х	(TO			hift Onsite Time:	6:00	am/pm
Location:	Na	sh 29		SI	nift Offsite Time:	2:00 PM	am/pm
Site Contact:		ackson				6	Total hrs
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs	Today:	6 hrs	Cumulativ	re Processing	Hrs:	139	hrs
BBLS Processed	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	2,352 bbls		BBLS Proces		55,32	0 bbls
BBLS/Hr Proce	ssed:	392	Cumulative	BBLS/Hr Proc	essed:	398.0	bbl/hr
Lead Supervisor:	PAUL	WORLEY	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		ONEAL	800		100	6.75	1.32
Crew		E WHITE	1000		100	7.12	1.45
			1200		100	6.88	0.98
<u> </u>			N/A		N/A	N/A	N/A
<u> </u>			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
L			HcL Acid	205	4,221	4,016	
			Sodium Hydroxide	180	2,515	2,335	
Visitors:	LARRY	Y ONEAL					
Visitors:	JAMIE	HARRIS					
Visitors:	STEVE	N TIPDEN					
ere there any abnor			o? id? If so, what items and v	when?			
0							
nod o work was properly	changes to t	he current sched	ule, including volumes ne	eded by client	?		
ave there been any							
	ny operation	al feedback (pos	itive or negative)?		0 (million (2000) - 0 (100 m m m m m m m m m m m m m m m m m m		
	ny operation	al feedback (pos	itive or negative)? Company:		-	хто	
as client provided a	ny operation	ral feedback (pos				хто	
as client provided a		al feedback (pos				XTO	

Date:	7/18	/2012		Report	Number:		43
					lumber:		8
				P			
Client:		ТО			hift Onsite Time:	6:00	am/pm
Location:		sh 29		SI	nift Offsite Time:	6:00 PM	am/pm
Site Contact:		ickson				0	Total hrs
Site Contact:		Norley	EDAC	Present (Onsite Activities:	PROCES	S WATER
STAND BY V			processor				
Processing Hrs Too		0 hrs		ve Processing	010000000000000000000000000000000000000	139	hrs
BBLS Processed To		0 bbls	**************************************	e BBLS Proces			0 bbls
BBLS/Hr Processe	:	#DIV/0!	Cumulative	BBLS/Hr Proc	essea:	398.0	bbl/hr
Lead Supervisor:	PAUL V	VORLEY	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator			800		N/A	N/A	N/A
Crew			1000		N/A	N/A	N/A
			1200		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
ļ			0:00	L	N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	4,016	4,016	
			Sodium Hydroxide	0	2,335	2,335	
Visitors:	····						
Visitors:							
Visitors:							
				37150 · · · J · · · · · · · · · · · · · · ·	711	de eno en	
ere there any abnorma	l operatio	nal issues onsite	?				
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re there any additional	supplies/e	equipment neede	d? If so, what items and	when?			
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se client provided :==:	ongratia-	al foodback (no -1	thus or nonethical?	(902:107) Y 1000C0098333		ener grænn	/:::::::::::::::::::::::::::::::::::::
as client provided any	operation	ar reedback (post		l des estate		YTO	-65806-3
			Company:			XTO	
Person:							

Date:	7/1	9/2012		Report	Number:		14
	-,, -	<u> </u>			umber:		8
Client:		хто		Si	nift Onsite Time:	16:00	am/pn
Location:		ash 29			nift Offsite Time:	9:00 PM	am/pn
Site Contact:		Jackson		-		3	Total hi
Site Contact:	Pau	l Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs 1	odav:	3 hrs	Cumulativ	re Processing I	Hrs:	142	hrs
BBLS Processed		1,141 bbls		e BBLS Proces			1 bbls
BBLS/Hr Proces		380.3333333		BBLS/Hr Proce			bbl/hr
Lead Supervisor:	PAUL	WORLEY	Readings:	flow back	Volts/Amps	рН	Turbidi
Lead Operator	CHRI	S PERRY	800		100	7.2	2.34
Crew			1000		N/A	N/A	N/A
			1200		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Ord
			HcL Acid	145	4,016	3,871	
			Sodium Hydroxide	120	2,335	2,215	
Visitors:							
Visitors:							
			d? If so, what items and w	when?			
		**************************************	ule, including volumes ne				54.
ive mere been any c	manyes to	the corrent sched	are, including volumes he	reded by Glienc			
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ıs client provided aı	ny operatio	nal feedback (posi		Carl Professional Control			
	ny operatio	nal feedback (posi	Company:			ХТО	··-···
is client provided a		nal feedback (posi				хто	

Date:	7/20/2012	l l	Report	Number:	4	15
	,,20,2012			umber:		8
Client:	XTO			nift Onsite Time:	9:00	am/pm
Location:	Nash 29		Sh	iift Offsite Time:	5:00 PM	am/pm
	Bo Jackson				7	Total hr
Site Contact: P	aul Worley		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs Today:	7 hrs	Cumulativ	e Processing I	Jre:	149	hrs
BBLS Processed Today:	2,136 bbls	**************************************	BBLS Proces			7 bbls
BBLS/Hr Processed:	305.1428571	39939-145306-20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	BBLS/Hr Proce	The state of the s		bbl/hr
DDLO/II FIOCESSEU.	300.1420371	Manager Duniulauva I	SELS/HE FIOLE	sseu.	353.3	DDMIII
Lead Supervisor: PAI	UL WORLEY	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator CH	IRIS PERRY	1200		100	6.82	1.43
Crew		1400		100	6.66	1.65
		1600		100	6.54	N/A
		N/A		N/A	N/A	N/A
		0:00		N/A	N/A	N/A
		0:00		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	220	3,871	3,651	
		Sodium Hydroxide	180	2,215	2,035	
Visitors:						
Visitors:						
Visitors:						
ere there any abnormal oper				AND PROPERTY.		
			/hen?		Minc.	
e there any additional suppli	les/equipment neede	d? If so, what items and w				
e there any additional suppli	les/equipment neede	d? If so, what items and w				
e there any additional supplication of the sup	les/equipment neede to the current sched	d? If so, what items and w				
e there any additional supplication is client provided any operation.	les/equipment neede to the current sched	d? If so, what items and w			XTO	
e there any additional supplication of the sup	les/equipment neede to the current sched	d? If so, what items and w ule, including volumes ned tive or negative)?			XTO	
e there any additional supplication is client provided any operators.	les/equipment neede to the current sched	d? If so, what items and w ule, including volumes ned tive or negative)?			XTO	
e there any additional supplication in the supplication is client provided any operation.	to the current sched	d? If so, what items and water the second sec	eded by client?			

Date:	7/21	/2012		Report	Number:		46
					lumber:		8
Client:		TO			nift Onsite Time:	9:00	am/pm
Location:		sh 29		SI	nift Offsite Time:	5:00 PM	am/pm
Site Contact:		ackson				0	Total hrs
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCES	S WATER
STAND BY	4572			97744740074007400			
Processing Hrs T		0 hrs		e Processing		149	hrs
BBLS Processed T		0 bbls		BBLS Proces			7 bbls
BBLS/Hr Process	sed:	#DIV/0!	Cumulative	BBLS/Hr Proce	essed:	393.3	bbl/hr
Lead Supervisor:	PAUL V	WORLEY	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator			1200		N/A	N/A	N/A
Crew			1400		N/A	N/A	N/A
			1600		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	3,651	3,651	
Visitors:			Sodium Hydroxide	0	2,035	2,035	
Visitors:							
Visitors:							
			1				
Vere there any abnorm	nal operatio	nal issues onsite	?				
10							
	al supplies/e	equipment neede	d? If so, what items and v	when?	1.00%		
10							
lave there been any c	hanges to th	ne current schedu	ule, including volumes ne	eded by client	?	SHEEL	
10							
	y operation	al feedback (posi	tive or negative)?				
ias client provided an			Company:			хто	
Person:							
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							

Date:	7/2	2/2012		Report	Number:		47
					lumber:		8
Client:		хто 1		S	hift Onsite Time:	9:00	am/pm
Location:		ash 29			hift Offsite Time:	5:00 PM	am/pm
Site Contact:		Jackson		Control of the Control		0	Total hrs
Site Contact:	Pau	l Worley		Present	Onsite Activities:	PROCES	S WATER
STAND BY			,				
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing	Hrs:	149	hrs
BBLS Processed 1		0 bbls	Cumulative	BBLS Proces	ssed:	58,59	7 bbls
BBLS/Hr Proces	sed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	393.3	bbl/hr
Lead Supervisor:	PAUL	WORLEY	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator			1200		N/A	N/A	N/A
Crew			1400		N/A	N/A	N/A
			1600		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
<u> </u>			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	3,651	3,651	
			Sodium Hydroxide	0	2,035	2,035	
Visitors:							
Visitors:							
Vere there any abnor			d? If so, what items and v				
O addition	ar supplies	requipment neede	G: II 50, WHAT REMS AND T				×
lave there been any c	hanges to I	the current sched	ule, including volumes ne	eded by client	?		
	y operation	nal feedback (posi	tive or negative)?				
as client provided an						XTO	
las client provided an Person:			Company:			XIO	

Date:	7/23	/2012		Report	Number:	4	8
1	.,,				lumber:		3
Client:	X	ТО	i r	S	hift Onsite Time:	9:00	am/pm
Location:		h 29			nift Offsite Time:	5:00 PM	am/pm
Site Contact:	Bo Ja	ckson			10.00	0 Total hr	
Site Contact:	Paul	Vorley		Present	Onsite Activities:	PROCES	S WATER
STAND BY							
Processing Hrs To		0 hrs	Cumulativ	e Processing	Hrs:	149	hrs
BBLS Processed T		0 bbls		BBLS Proce			7 bbls
BBLS/Hr Process	ed:	#DIV/0!	Cumulative I	BBLS/Hr Proc	essed:	393.3	bbl/hr
Lead Supervisor:	PAUL V	VORLEY	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			1200		N/A	N/A	N/A
Crew			1400	······································	N/A	N/A	N/A
			1600		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	3,651	3,651	
			Sodium Hydroxide	0	2,035	2,035	
Visitors:							
Visitors:							
Visitors:							
				······································			
				1 2 6000			
Vere there any abnorm IO	nal operatio	nal issues onsi	e?				
re there any addition	al supplies/	equipment need	ed? If so, what items and v	when?		- Valence	
lava thare hean any c	hanges to t	ne current sche	dule, including volumes ne	eded by clien	!?		
<u> </u>							
<u> </u>							
iO las client provided an	y operation	al feedback (po					
io ias client provided an Person:	y operation	al feedback (po	sitive or negative)? Company:			хто	
io	y operation	al feedback (po			l .		

Date:	7/2	4/2012		Report I	Number:		19
io-62-union	.,				umber:		8
Client:	>	кто	ſ	Sh	ift Onsite Time:	9:00	am/pm
Location:	Na	ish 29		Sh	ift Offsite Time:	5:00 PM	am/pm
Site Contact:	Во	lackson		a Parting		0	Total hrs
Site Contact:	Paul	Worley	[Present C	nsite Activities:	PROCES	S WATER
STAND BY							
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing H	irs:	149	hrs
BBLS Processed 1	- Contractor Contractor - Contr	0 bbls		BBLS Proces	Andreas Anna and Anna Anna Anna Anna Anna Anna	58,59	7 bbls
BBLS/Hr Process	sed:	#DIV/0!	Cumulative E	BLS/Hr Proce	ssed:	393.3	bbl/hr
Lead Supervisor:	PAUL	WORLEY	Readings:	flow back	Volts/Amps	рH	Turbidity
Lead Operator			1200	O THE PERSON OF	N/A	N/A	N/A
Crew			1400		N/A	N/A	N/A
			1600		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	3,651	3,651	andre e e e e e e e e e e e e e e e e e e
			Sodium Hydroxide	0	2,035	2,035	
Visitors:							
Visitors:							
Visitors:							
			e? ed? If so, what items and w	/hen?	**************************************		
	hanges to t	the current sched	ule, including volumes nee	eded by client?			
ave there been any c				eded by client?			
ave there been any c			itive or negative)?	eded by client?	Approved to the control of the contr	XTO	
ave there been any c				eded by client?		XTO	
ave there been any c	y operatior		itive or negative)?	eded by client?		XTO	

Date:	7/25	/2012	ĺ	Report	Number:		50
The state of the s					lumber:		8
Client:		ТО			hift Onsite Time:	9:00	am/pm
Location:		sh 29		SI	nift Offsite Time:	5:00 PM	am/pm
Site Contact:	Bo Ja	ackson		A CONTRACTOR OF A		0	Total hrs
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCES	S WATER
STAND BY							
Processing Hrs T		0 hrs	X	e Processing		149	hrs
BBL\$ Processed 1		0 bbls		BBLS Proces			7 bbls
BBLS/Hr Proces	sed:	#DIV/0!	Cumulative I	BLS/Hr Proc	essed:	393.3	bbl/hr
Lead Supervisor:	PAUL V	VORLEY	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator			1200		N/A	N/A	N/A
Crew			1400		N/A	N/A	N/A
			1600		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
<u> </u>			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	3,651	3,651	
			Sodium Hydroxide	0	2,035	2,035	
Visitors:			,		,		
Visitors:				~***			
Visitors:							
Vere there any abnorr NO	nal operatio	nal issues onsite	9?	27/30/24/2	35 Ac. (1785/82)		
							550000000000000000000000000000000000000
Are there any addition	al supplies/e	equipment needs	ed? If so, what items and w	rhen?			
NO		p. 7	ed? If so, what items and v				
NO		p. 7					
NO Have there been any c NO Has client provided an	hanges to th	ne current sched	ule, including volumes ne			Application of the state of the	Politica
lave there been any c	hanges to th	ne current sched	ule, including volumes ne			XTO	1600
NO Have there been any c NO Has client provided an	hanges to th	ne current sched	ule, including volumes ne itive or negative)?			AMELICAN TOTAL	

Date:	7/26	/2012		Report	Number:		51		
	······································	<u>′</u>			umber:		8		
Client:		то			nift Onsite Time:	9:00	am/pm		
Location:	Nas	sh 29		Sh	ift Offsite Time:	5:00 PM	am/pm		
Site Contact:		ackson				0	Total hrs.		
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	S WATER		
STAND BY									
Processing Hrs To		0 hrs		e Processing I		149	hrs		
BBLS Processed To		0 bbls		BBLS Proces			7 bbls		
BBLS/Hr Process	ed:	#DIV/0!	Cumulative	Cumulative BBLS/Hr Processed:			393.3 bbl/hr		
Lead Supervisor:	PAUL V	VORLEY	Readings:	flow back	Volts/Amps	рН	Turbidity		
Lead Operator			1200		N/A	N/A	N/A		
Crew			1400		N/A	N/A	N/A		
			1600		N/A	N/A	N/A		
			N/A		N/A	N/A	N/A		
			0:00		N/A	N/A	N/A		
<u> </u>			0:00		N/A	N/A	N/A		
			Chemical	Usage	Start Inv.	End Inv.	On Order		
			HcL Acid	0	3,651	3,651			
			Sodium Hydroxide	0	2,035	2,035			
Visitors:									
Visitors:									
Visitors:									
				mer e e e e e e e e e e e e e e e e e e					
/ere there any abnorm ○	iai operatio	nai issues onsiti	31						
0									
									
re there any additions	l supplies/	equipment needs	ed? If so, what items and v	when?					
0									

ave there been any ch	anges to ti	ne current sched	ule, including volumes ne	eded by client	?				
0									
as client provided any	operation	al feedback (pos		r		V=0			
			Company:			XTO			
Person:									
/A									

Date:	8/1	/2012		Report	Number:		52
				CHICAGO CONTRACTOR CON	lumber:		8
Client:	Х	TO			hift Onsite Time:	11:00	am/pm
Location:		sh 29		SI	hift Offsite Time:	4:00 PM	am/pm
Site Contact:		ackson			100	0	Total hrs
Site Contact:	Jasor	n Distall		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs To	oday:	0 hrs	Cumulativ	e Processing	Hrs:	149	hrs
BBL\$ Processed T	oday:	0 bbls	***************************************	BBLS Proces		58,59	7 bbls
BBLS/Hr Process	ed:	#DIV/0!	Cumulative	BBLS/Hr Proc	essed:	393.3	bbl/hr
Lead Supervisor:	lasor	n Distall	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator	00301	. 270(011	1200	HOW DOCK	N/A	N/A	N/A
Crew	Eddie N	McGruder	1400		N/A	N/A	N/A
		ny Dean	1600		N/A	N/A	N/A
		y Lee	N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	3,651	3,651	
			Sodium Hydroxide	67	2,035	1,968	
Visitors:							
Visitors:							
Visitors:							
ere there any abnorm	nal operatio	nal issues onsite	17				
O		oguiomant naod	ed? If so, what items and v				
0	п оприсол	equipment need	or in 30, what temp and	/HGII I			
	,,, , ,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,				27 200 2 200 200 200 200 200 200 200 200		
	X-12 1 - 1	Property of the contract of th	and the street of the street o	eded by client	7		
ave there been any cl	nanges to ti	ne current sched	ule, including volumes ne	caca by onem			
	anges to ti	ne current sched	uie, including volumes ne	oute by them			
O as client provided an			itive or negative)?			7	Sand Sand Sand Sand
as client provided an					200 M	XTO	- 120 Marie 120
O as client provided an			itive or negative)?		2 mag (2)	XTO	401-51/2-0-7

Date:	8/2	2/2012		Report	Number:		 53
		-, 2012			lumber:		8
Client:	,	кто		S	hift Onsite Time:	5:30	am/pm
Location:	Na	ish 29		S	hift Offsite Time:	4:00 PM	am/pm
Site Contact:	Во	Jackson				10.5	Total hrs
Site Contact:	Jasc	n Distall		Present	Onsite Activities	PROCES	S WATER
Processing Hrs T	oday:	3 hrs	Cumulativ	re Processing	Hrs:	152	hrs
BBLS Processed T		1,392 bbls	Cumulative	59,989 bbls			
BBLS/Hr Process	sed:	464	Cumulative	BBLS/Hr Proc	essed:	394.7	bbl/hr
Lead Supervisor:	Jasc	n Distall	Readings:	flow back	Volts/Amps	рH	Turbidity
Lead Operator			1200		20v 100a	7.05	3.32
Crew	Eddie	McGruder	1400		N/A	N/A	N/A
	Sam	my Dean	1600		20v 100a	7.03	3.27
	Ra	y Lee	N/A		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
			0:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	143	3,651	3,508	0.0.00
L			Sodium Hydroxide	117	1,968	1,851	
Visitors:			, , , , , , , , , , , , , , , , , , , ,				
Visitors:							
Visitors:							
fere there any abnorres, the power source v				Asserted Allegary (1996)			
re there any addition.	al supplies	/equipment neede	ed? If so, what items and	when?		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
ave there been any c	hanges to	the current sched	ule, including volumes ne	eded by client	?		
as client provided an	y operatio	nal feedback (pos	itive or negative)?				
			Company:			хто	
Person:							

Date:	8/3/2012		Report	Number:		54	
	0, 3, 2012			lumber:		8	
Client:	XTO			hift Onsite Time:	5:30	am/pm	
Location:	Nash 29			nift Offsite Time:	4:00 PM	am/pm	
Site Contact:	Bo Jackson				10.5	Total hr	
Site Contact:	Chad Edwards		Present	Onsite Activities:	PROCES	SS WATER	
	errore 6 hrs		0	Uma.	158	hrs	
Processing Hrs T BBLS Processed			Cumulative Processing Hrs:				
BBLS/Hr Proces			Cumulative BBLS Processed: 63,340 bbls Cumulative BBLS/Hr Processed: 400.9 bbl/hr				
DOLO/IN FIOCES	seu. 300.3	- Cumulative .	JOEONII 1 100		700.0	DD////	
Lead Supervisor:	Chad Edwards	Readings;	flow back	Volts/Amps	Hq	Turbidit	
Lead Operator	Jason Distall	1200		20v 100a	6.99	3.29	
Crew	Eddie McGruder	1400		N/A	N/A	N/A	
	Sammy Dean	1500		20v 100a	7.03	3.18	
	Ray Lee	N/A		N/A	N/A	N/A	
		0:00		N/A	N/A	N/A	
		0:00		N/A	N/A	N/A	
		Chemical	Usage	Start Inv.	End Inv.	On Orde	
		HcL Acid	345	3,508	3,163		
		Sodium Hydroxide	361	1,851	1,490		
Visitors:	Bo Jackson						
Visitors:							
Visitors:						<u> </u>	
					7.10.50		
/ere there any abnon ○	mal operational issues on	isite?					
O							
so those any addition	al eupplice/aguinment no	and and a life of what items and u	hon?		1000		
		eeded? If so, what items and v	/hen?		75.00.000		
re there any addition es, supply list will be o		eeded? If so, what items and w	/hen?				
		eeded? If so, what items and v	/hen?			An	
es, supply list will be o	complete tomorrow.			?			
es, supply list will be o	complete tomorrow.	eeded? If so, what items and wheeled? If so, what items and wheeled items are been something volumes necessarily produced water do to possible to be possible.	eded by client				
es, supply list will be o	complete tomorrow.	hedule, including volumes ne	eded by client	?			
es, supply list will be o	complete tomorrow.	hedule, including volumes ne	eded by client			25. 6333988	
es, supply list will be of lave there been any of We are limited to appro	complete tomorrow.	hedule, including volumes ne coming produced water do to po	eded by client				
es, supply list will be of lave there been any of We are limited to appro	complete tomorrow. changes to the current scl ximately 2,000 bbls/day inc	hedule, including volumes ne coming produced water do to po	eded by client	**************************************	хто		
es, supply list will be of lave there been any of We are limited to appro	complete tomorrow. changes to the current scl ximately 2,000 bbls/day inc	hedule, including volumes necoming produced water do to po positive or negative)?	eded by client		XTO		
ave there been any of the are limited to approase client provided an Person:	changes to the current sci eximately 2,000 bbls/day incomy operational feedback (p	hedule, including volumes necoming produced water do to po positive or negative)?	eded by client	**************************************	XTO	CASSIPARIA	

	8/4	/2012		Report	Number:		55
				Unit N	lumber:		8
Client:)	KTO	I	S.	hift Onsite Time:	2:30	am/pm
Location:		ish 29		wylffield (Francis Control	nift Offsite Time:	2:00 PM	am/pm
Site Contact:		lackson					Total hrs
Site Contact:		Edwards		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs To	oday:	8.75 hrs	Cumulativ	e Processing	Hrs:	166.75	hrs
BBLS Processed T	oday:	4,903 bbls	Cumulative	BBLS Proces	sed:	68,24	3 bbls
BBLS/Hr Process	ed:	560.3428571	Cumulative I	BBLS/Hr Proc	essed:	409.3	bbl/hr
Lead Supervisor:	Chad	Edwards	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Jaso	n Distall	06:00		20v 100a	7.1	4.25
Crew	Eddie I	McGruder	10:00		20v 100a	7.08	4.03
	Samr	my Dean	12:30		20v 100a	7.03	3.25
	Ra	ıy Lee	N/A		N/A	N/A	N/A
	Ker	n Ehler	N/A		N/A	N/A	N/A
	Adan	n Pollard	N/A		N/A	N/A	N/A
	Eli T	angura					
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	505	3,163	2,658	
			Sodium Hydroxide	508	1,490	982	
Visitors:	Bo J	lackson					
Visitors:							
Visitors:							
	ial operation	onal issues onsite	>		And the second second		
Vere there any abnorm							
o re there any additions	ıl supplies	/equipment needec	1? If so, what items and v	vhen?			
0	ıl supplies	/equipment needed	1? If so, what items and v	vhen?			
o re there any additions	ıl supplies	/equipment needed	1? If so, what items and v	vhen?			
o re there any additions	ıl supplies	/equipment needed	1? If so, what items and v	vhen?	海 教 家、		
re there any additiona to, supplies on order	hanges to t	the current schedu	le, including volumes ne	eded by client	State and the second second		
re there any additiona to, supplies on order lave there been any cl We are limited to approx	hanges to t	the current schedu		eded by client	State and the second second	son expects the	at to change
re there any additiona to, supplies on order	hanges to t	the current schedu	le, including volumes ne	eded by client	State and the second second	son expects that	at to change
re there any additionallo, supplies on order lave there been any clude are limited to approximate to have tanks	hanges to t kimately 2,0 s full by 2:30	the current schedu 00 bbls/day incomir 0 am.	ile, including volumes ne	eded by client	State and the second second	son expects the	at to change
re there any additional to, supplies on order lave there been any clave there been any clave are limited to approximate to have tanks as client provided any	hanges to t kimately 2,0 s full by 2:30 y operation	the current schedu 00 bbls/day incomir 0 am. nal feedback (posit	le, including volumes ne ig produced water do to po live or negative)?	eded by client	State and the second second		at to change
re there any additional to, supplies on order lave there been any clave there been any clave are limited to approximate to have tanks as client provided an Person:	hanges to t kimately 2,0 s full by 2:30 y operation	the current schedu 00 bbls/day incomir 0 am. nal feedback (posit o Jackson	le, including volumes ne ng produced water do to po live or negative)? Company:	eded by client wer outages, h	owever, Bo Jacks	XTO	
re there any additional to, supplies on order lave there been any clave there been any clave are limited to approximate to have tanks as client provided an Person:	hanges to t kimately 2,0 s full by 2:30 y operation Bo peration an	the current schedu 100 bbls/day incomir 10 am. 11 al feedback (posit 12 o Jackson 13 d understands that	le, including volumes ne ig produced water do to po live or negative)?	eded by client wer outages, h	owever, Bo Jacks	XTO	
re there any additional to, supplies on order lave there been any clave are limited to approximate hopes to have tanks as client provided an Person:	hanges to	the current schedu 100 bbls/day incomir 10 am. 11 al feedback (posit 12 o Jackson 13 d understands that	le, including volumes ne ng produced water do to po live or negative)? Company:	eded by client wer outages, h	owever, Bo Jacks	XTO	
re there any additional consupplies on order lave there been any clave are limited to approximate to approximate the provided any Person: o is pleased with our or or returning rate up to a Additional Commenter were no chemical	hanges to	the current schedu 100 bbls/day incomir 10 am. 11 feedback (posit 12 o Jackson 13 d understands that 14 understands that 15 understands that 16 understands that 17 understands that 18 understands that 18 understands that 19 understands that 19 understands that 10 understands the understands that 10 understands the understands that 10 understands the understands that 10 understands the under	le, including volumes ne ig produced water do to po live or negative)? Company: we are currently limited by th pH and turbidity are state	eded by client wer outages, h our incoming s	owever, Bo Jacks upply of produced shut down treating	XTO I water. He ha	s been wor
re there any additional to, supplies on order lave there been any clave are limited to approving hopes to have tanks as client provided any Person; o is pleased with our on returning rate up to a Additional Committee will continue to receive will continue to receive.	hanges to tokimately 2,0 is full by 2:30 is full by 3:30 is fu	the current schedu 00 bbls/day incomir 0 am. nal feedback (posit o Jackson d understands that 000 bbls/day. Its needed today.Boi rates of produced v	le, including volumes ne ng produced water do to po live or negative)? Company: we are currently limited by	eded by client wer outages, h our incoming s ole. We had to a	owever, Bo Jacks upply of produced shut down treating we remained on lo	XTO I water. He ha	s been wor

Date:	8/5	5/2012		Report	Number:		 56
		•			lumber:		8
Client:)	XTO		S	hift Onsite Time:	6:00	am/pm
Location:	Na	ash 29		SI	nift Offsite Time:	4:00 PM	am/pm
Site Contact:		Jackson				11.5	Total hrs
Site Contact:	Chad	Edwards		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs T	oday:	6 hrs	Cumulativ	e Processing	Hrs:	172.75	hrs
BBLS Processed T	oday:	3,263 bbls		BBLS Proces	······································	71,50	6 bbls
BBLS/Hr Process	sed:	543.8333333	Cumulative	BBLS/Hr Proc	essed:	413.9	bbl/hr
Lead Supervisor:	Chad	Edwards	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator			08:00		20v 100a	7.1	5.12
Crew	Eddie	McGruder	10:00		20v 100a	7.09	4.03
	Sami	my Dean	12:30		20v 100a	7.11	4.05
	Ra	y Lee	N/A		N/A	N/A	N/A
	n Ehler	N/A		N/A	N/A	N/A	
	Adam Pollard		N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	326	2,658	2,332	***************************************
			Sodium Hydroxide	331	982	651	
Visitors:	Во	lackson					
Visitors:							
Visitors:							
ere there any abnorn	nal operatio	onal issues onsite	************				
0							
re there any additiona o, supplies on order	al supplies	equipment needed	1? If so, what items and v	vhen?			
ave there been any cl	hanges to t	the current schedu	le, including volumes ne	eded by client	7	(wastricter) mining	
0							
		······································					
-			ive or negative)?				
as client provided an	y operation	nal feedback (posit		1200			
	y operation	nal feedback (posit	Company:			XTO	

Date:	8/6	/2012	İ	Report	Number:		57	
		,			lumber:		8	
			,					
Client:		TO OT			hift Onsite Time:	5:30	am/pm	
Location:		sh 29		S	hift Offsite Time:	7:30 PM 11.5	am/pm Total hrs	
Site Contact:		ackson		Present Onsite Activities:				
Site Contact:	Chad	Edwards		Present	Onsite Activities:	PROCES	SS WATER	
Processing Hrs T	odav:	10.5 hrs	Cumulativ	e Processing	Hrs:	183.25	5 hrs	
BBLS Processed		5,060 bbls		BBLS Proce		76,566 bbls		
BBLS/Hr Proces	sed:	481.9047619	Cumulative	417.8	bbl/hr			
Lead Supervisor:	Chad	Edwards	Readings:	flow back	Volts/Amps	рН	Turbidity	
Lead Operator	Samn	ny Dean	08:00		20v 100a	7.1	2.58	
Crew	Eddie I	McGruder	10:00		20v 100a	7.01	2.25	
	Ra	y Lee	14:00		20v 100a	7.05	2.06	
		is Ray	16:00		20v 100a	7.09	1.89	
	Regina	ald White	N/A		20v 100a	7	1.92	
<u> </u>			N/A		N/A	N/A	N/A	
			Chemical	Usage	Start Inv.	End Inv.	On Orde	
			HcL Acid	512	2,332	1,820		
			Sodium Hydroxide	379	651	272		
Visitors:	Bo J	ackson						
Visitors:								
Vere there any abnor	mal oneratio	anal legues onsits	3					
No	al supplies/	equipment neede	d? If so, what items and v	when?				
Supplies have been ord	lered and wi	Il begin receiving to	omorrow					
lave there heen any c	hanges to t	he current sched	ule, including volumes ne	eded by client	?			
	lit shift on a	trial basis tomorrov	w. Bo Jackson will be out F			ture as much	water as	
- ·	orning and ev	ening shifts at his	suggestion.					
- ·				and serve the alege				
ossible, we will run mo	ny operation	al feedback (posi	Control of the Contro					
ossible, we will run mo	ny operation	al feedback (posi	tive or negative)? Company:			хто		

	8/	7/2012		Report	Number:		58
					lumber:		8
Client:		хто	!	-	hift Onsite Time:	6:00	am/pm
Location:		ash 29		COLUMN TO SERVICE STATE OF THE	nift Offsite Time:	12:00 PM	am/pm
Site Contact:		Jackson		107741777	ant Onsite Time.	18	Total hrs.
Site Contact:		l Worley		Present	Onsite Activities:		SS WATER
		11 1				101	
Processing Hrs 1 BBLS Processed	***************************************	11 hrs 5,560 bbls	THE CONTRACT OF THE PARTY OF TH	e Processing		194	
BBLS/Hr Proces		505.4545455		BBLS/Hr Proces	TO SECURE THE PARTY OF THE PART		26 bbls
DDL3/HI FIOCES	seu.	505.4545455	Cumulauve	BBLS/HF Proc	essea:	423.	3 bbl/hr
Lead Supervisor:	Pau	il Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		my Dean	08:00	TIONY BOCK	100	6.89	1.43
Crew		McGruder	10:00		100	6.93	0.89
		ay Lee	14:00		100	7.12	0.93
		ris Ray	16:00		100	7.24	1.23
		nald White	18:00		100	7.1	1.56
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	375	3,750	3,375	eceived 4000 g
			Sodium Hydroxide	420	1,200	780	Yes
Visitors:	Во	Jackson					
Visitors:	***************************************						
Visitors:							
Vere there any abnor			? i? If so, what items and v	vhen?			
lo are there any addition	changes to	slequipment needed the current schedu NKS FILL IN BETWE	d? If so, what items and voles are selected in the selected in		2	XTO	
re there any addition lave there been any of PLIT SHIFTS TO LET	changes to	slequipment needed the current schedu NKS FILL IN BETWE	d? If so, what items and ville, including volumes ne EEN SHIFTS.		2	THE STATE OF THE S	

Date:	8/8	3/2012	I	Report	Number:		59
	-7				Number:		8
Client:	7	кто		s s	hift Onsite Time:	6:00	am/pm
Location;	Na	ish 29			hift Offsite Time:	1:00 AM	am/pm
Site Contact:	Во	lackson			Signature (State) who has	19	Total hrs.
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCE	SS WATER
Processing Hrs 1	Todav:	12 hrs	Cumulativ	e Processing	Hrs:	20€	5 hrs
BBLS Processed		4,126 bbls		BBLS Proces			252 bbls
BBLS/Hr Proces	sed:	343.8333333	Cumulative BBLS/Hr Processed: 418.7 bbl/hr				
muzie.	D	14/			PRESIDENCE - CALAD	2000-200-200	e remaining access
Lead Supervisor: Lead Operator		Worley n Erler	Readings: 08:00	flow back	Volts/Amps	pH 7.31	Turbidity
Crew		McGruder	10:00		100	7.21	0.78
CIEVA		ly Lee	14:00		100	6.89	0.78
		s Perry	16:00		100	7.33	0.56
-		ald White	18:00		100	7.1	1.34
			N/A		N/A	N/A	N/A
					,t		
			Chemical	Usage	Start Inv.	End Inv.	On Order
L			Hc L Acid	300	3,750	3,450	eceived 4000 ga
			Sodium Hydroxide	335	3,280	2,945	eceived 2500 gal
Visitors:	Bo J	ackson					
Visitors:	····						
Visitors:							
ere there any abnor	mal operation	onal issues onsite	Constitute the second				20 dalimb 20 ha 23
			d? If so, what items and w				Parador Asia
ave there been any o	Changes to t	he current schedo IKS FILL IN BETW	ule, including volumes ned EEN SHIFTS		*		The state of the s
ave there been any of PLIT SHIFTS TO LET	Changes to t	he current schedo IKS FILL IN BETW	ule, including volumes ned EEN SHIFTS. tive or negative)?			The state of the s	Section Section 11.
ave there been any o	Changes to t	he current schedo IKS FILL IN BETW	ule, including volumes ned EEN SHIFTS			XTO	The second of th

Date:	8/9	/2012		Report	Number:		60
	0,3,	2012			lumber:		8
			'				
Client:	X	TO		S	hift Onsite Time:	6:00	am/pm
Location:	Nas	sh 29		S	hift Offsite Time:	1:00 AM	am/pm
Site Contact:	Bo Ja	ackson			30.00	12	Total hrs.
Site Contact:	Paul	Worley		Present (Onsite Activities:	PROCES	SS WATER
Processing Hrs 1	oday:	8 hrs	Cumulativ	e Processing	Hrs:	214	hrs
BBLS Processed	Today:	3,441 bbls	Cumulative		89,693 bbls		
BBLS/Hr Proces	sed:	430.125	Cumulative I	BBLS/Hr Proc	essed:	419.1	bbl/hr
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		AcGruder	08:00	HOW DACK	100	6.97	1.87
Crew		y Lee	10:00		100	6.78	0.78
		Perry	19:00		100	7.23	0.69
		ld White	21:00		100	6.89	0.56
			22:00		100	6.76	1.23
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	351	3,450	3,099	no
	7444	-	Sodium Hydroxide	374	2,945	2,571	no
Visitors:	Bo Ja	ackson					
Visitors:							
Visitors:							
Vere there any abnor	mal operatio	nal issues onsite	8	dalah ya begar dalah d		6 288	
lo							
re there any addition	al supplies/e	iquipment neede	d? If so, what items and w	then?	98855555	0.5 7.5 8686	2477
re there any addition	al supplies/e	quipment neede	ed? If so, what items and w	rhen?			
re there any addition	al supplies/e	equipment neede	ed? If so, what items and w	rhen?			
re there any addition	al supplies/e	equipment neede	nd? If so, what items and w	rhen?		in contraction	
ave there been any c	hanges to th	ne current sched	ule, including volumes ne				
	hanges to th	ne current sched	ule, including volumes ne		?		
ave there been any c	hanges to th	ne current sched	ule, including volumes ne		?		
lave there been any o	changes to the	ne current sched KS FILL IN BETW	ule, including volumes ned EEN SHIFTS.			COMMENTS OF	20 P. C.
ave there been any of PLIT SHIFTS TO LET	changes to the	ne current sched KS FILL IN BETW	ule, including volumes ned EEN SHIFTS. Itive or negative)?		?		
ave there been any o	changes to the	ne current sched KS FILL IN BETW	ule, including volumes ned EEN SHIFTS.		? calculate	XTO	
ave there been any o PLIT SHIFTS TO LET as client provided ar	changes to the	ne current sched KS FILL IN BETW	ule, including volumes ned EEN SHIFTS. Itive or negative)?				

Date:	8/10	0/2012		Report	Number:		61	
		,			lumber:		8	
Client:	>	(TO		S	hift Onsite Time:	6:00	am/pm	
Location:	Na	sh 29		S	hift Offsite Time:	4:00 PM	am/pn	
Site Contact:	Bo J	ackson		221,000,000 to 221,000	Marie Carlo	9	Total hr	
Site Contact:	Paul	Worley		Present	Onsite Activities:	PROCES	S WATER	
Processing Hrs To	oday:	9 hrs	Cumulativ	ve Processing	Hrs:	223	hrs	
BBLS Processed To	oday:	3,990 bbls		Cumulative BBLS Processed:			3 bbls	
BBLS/Hr Process	ed:	443.3333333	Cumulative	Cumulative BBLS/Hr Processed: 4				
Lead Supervisor:	Paul	Worley	Readings:	flow back	Volts/Amps	pН	Turbidi	
Lead Operator		McGruder	08:00	Locality of Much	100	6.76	1.35	
Crew		y Lee	10:00		100	6.23	1.67	
		s Perry	12:00	i	100	7.12	1.98	
		ald White	14:00		100	6.52	1.32	
			N/A		N/A	N/A	N/A	
			N/A		N/A	N/A	N/A	
<u> </u>			Chemical	Usage	Start Inv.	End Inv.	On Ord	
			HcL Acid	359	2,748	2,389	no	
L			Sodium Hydroxide	403	2,197	1,794	no	
Visitors:	Bo J	ackson						
Visitors:								
Visitors:								
Vere there any abnorm	al operation	onal issues onsite	?					
0								
re there any additiona	l supplies	equipment neede	d? If so, what items and v	when?			4.00	
ave there been any ch	anges to t	he current schedu	ile, including volumes ne	eded by client	3			
					There was a second of the seco			
	operation	ial feedback (posi	tive or negative)?				2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	
as chefit provided and			Company:			XTO		
Person:								

Date:	8/11/2012			Report	Number:		62
	•			hi american hi dilah yadan am	umber:		8
Client:	XTO		1	ر.	nift Onsite Time:	6:00	am/pn
Location:	Nash 29				ift Offsite Time:	6:00 PM	am/pn
Site Contact:	Bo Jackson		ļ		San La Company	10	Total hr
Site Contact:	Paul Worley			Present (Onsite Activities:		S WATER
Processing Hrs T	oday: 10	hrs	Cumulativ	re Processing I	ire.	233	hrs
BBLS Processed				BBLS Proces			52 bbls
BBLS/Hr Proces			Cumulative BBLS/Hr Processed:				bbl/hr
Lead Supervisor:	Paul Worley		Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Eddie McGruder		08:00		100	6.87	1.97
Crew	Ray Lee		10:00		100	6.43	1.89
	Chris Perry		12:00		100	6.97	1.78
F	Reginald White		14:00		100	6.89	1.43
			16:00		100	6.76	1.56
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Ord
			HcL Acid	385	2,389	2,004	no
			Sodium Hydroxide	411	1,794	1,383	no
Visitors:	Bo Jackson						
Visitors:							
/ere there any abnorr o	nal operational issu	es onsite?				4.55.	
re there any addition	al supplies/equipme	nt needed?	If so, what items and v	when?			
				eded by client	?		
lave there been any c	hanges to the curre	it schedule,	including volumes ne				
lave there been any c			4.00				
			4.00			ХТО	

Date:	8/12/	2012		Report	Number:	6	63
				Unit N	lumber:	***************************************	8
Client:	XT	· 0	ĺ	S	hift Onsite Time:	6:00	am/pm
Location:	Nasi	n 29		S	hift Offsite Time:	6:00 PM	am/pm
Site Contact:	Bo Ja	ckson			No. of the Control of	16 hrs	Total hr
Site Contact:	Paul V	Vorley		Present	Onsite Activities	PROCES	S WATER
Processing Hrs T	oday:	16 hrs	Cumulativ	e Processing	Hrs:	239	hrs
BBLS Processed 1	oday:	3,359 bbls	Cumulative	BBLS Proces	ssed:	101,32	21 bbls
BBLS/Hr Proces	sed:	209.9375	Cumulative I	BBLS/Hr Proc	essed:	423.9	bbl/hr
Lead Supervisor:	Paul V	Vorley	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Eddie M	cGruder	08:00		100	6.87	1.97
Crew	Ray		10:00		100	6.43	1.89
	Chris		12:00		100	6.97	1.78
ļ	Reginal	d White	14:00		100	6.89	1.43
			16:00		100	6.76	1.56
-			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	350	2,004	1,654	no
			Sodium Hydroxide	411	1,794	1,383	no
Visitors:	Bo Ja	ckson					
Visitors:							
Visitors:							
/ere there any abnorr o	nal operation	nal issues onsite	?				
			d? If so, what items and v			Amar	
	hanges to the	e current schedu	ıle, including volumes ne			Milar	

Date:	2/	13/2012	Γ	Ponor	Number:		 64	
- Date	- 0,	13/2012		***********************	umber:		8	
			L	Oint it	amoer.		0	
Client:		XTO		SI	nift Onsite Time:	6:00	am/pm	
Location:	N	ash 29		Sh	ift Offsite Time:	6:00 PM	am/pm	
Site Contact:	Во	Jackson			754 m. vi	12 hrs	Total hr	
Site Contact:	Pau	ul Worley	Ĺ	Present 0	Onsite Activities	PROCES	S WATER	
Processing Hrs T	oday:	12 hrs	Cumulativ	Processing I	Hrs:	235	hrs	
BBLS Processed T	oday:	4,735 bbls		BBLS Proces		106,056 bbls		
BBLS/Hr Process	Several action of the	394.5833333	Cumulative F	BLS/Hr Proce	essed:	451.3 bbl/hr		
Lead Supervisor:	Pau	ul Worley	Readings:	flow back	Volts/Amps	рН	Turbidit	
Lead Operator	Eddie	McGruder	08:00		100	6.87	1.97	
Crew	R	ay Lee	10:00		100	6.43	1.89	
	Chris Perry Reginald White	ris Perry	12:00		100	6.97	1.78	
		nald White	14:00		100	6.89	1.43	
			16:00		100	6.76	1.56	
			N/A		N/A	N/A	N/A	
			Chemical	Usage	Start Inv.	End Inv.	On Orde	
			HcL Acid	405	2,004	1,599	no	
			Sodium Hydroxide	411	1,794	1,383	no	
Visitors:	Во	Jackson						
Visitors:								
Visitors:								
ere there any abnom	nal operat	ional issues onsite	?	e de character	P. Const. Tr. State Street			
o O	nai operat	ional issues onsite		e no fabricisti	Little Distriction			
		· · · · · · · · · · · · · · · · · · ·						
re there any additiona	al supplies	s/equipment needed	d? If so, what items and w	hen?	**************************************	2 7 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A		
			d? If so, what items and w				Property .	
ave there been any cl	hanges to	the current schedu	ile, including volumes nee		Commence of the commence of th			
ave there been any cl	hanges to	the current schedu	ile, including volumes nee		A CONTRACTOR OF THE CONTRACTOR	And the second s		

Performed our morning JSA, Weather conditions some rain, slippery and muddy. Proper PPE when handling chemicals. Watch out for your coworkers. When lifting use the buddy system. XTO wells keep going down, have a crew working on them.

Client: XTO Location: Nash 29 Site Contact: Bo Jackson Site Contact: Sammy Deam Processing Hrs Today: 14 hrs BBLS Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White Resided White Resi		8/1	14/2012	•	Report	Number:		65
Stite Contact: Bo Jackson Site Contact: Sammy Deam Processing Hrs Today: 14 hrs BBLS Processed Today: 6.008 bbls BBLSHr Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White 14:00 100 6.87 14:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.97 18:00 100 6.89 16:00 100 6.97 18:00 100 6.89 16:00 100 6.97 18:00 100 6.97 19:0			. 172022					
Shift Offsite Time: 6:00 PM a 14 hrs Tr.								
Site Contact: Sammy Deam Processing Hrs Today: 14 hrs BBLS Processed Today: 6,008 bbls BBLS/Hr Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White Reginald White Wisitors: Bo Jackson Visitors: Visitors: Visitors: Visitors: Reter there any abnormal operational issues onsite? Tere there any additional supplies/equipment needed? If so, what items and when? Lead Client provided any operational feedback (positive or negative)?	Client:		XTO				6:00	am/pr
Processing Hrs Today: 14 hrs BBLS Processed Today: 6,008 bbls BBLS/Hr Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White 16:00 100 6.87 Reginald White 16:00 100 6.897 N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. On Hcl Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: on the current schedule, including volumes needed by client?	Location:	Na	ash 29		Sh	ift Offsite Time:	6:00 PM	am/pr
Processing Hrs Today: 14 hrs BBLS Processed Today: 6,008 bbls BBLS/Hr Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee 10:00 100 6.87 Crew Reginald White 14:00 100 6.76 Reginald White 14:00 100 6.76 N/A N/A N/A Chemical Usage Start Inv. End Inv. Distors: Visitors: Visitors Scientific Action (Control of the Current Schedule, Including volumes needed by client?	Site Contact:	Во	Jackson				14 hrs	Total h
BBLS/Hr Processed: 4.29.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White 11:00 100 6.87 12:00 100 6.87 12:00 100 6.89 12:00 100 6.89 12:00 100 6.89 16:00 100 6.89 16:00 100 6.89 16:00 100 6.76 N/A N/A N/A N/A N/A N/A Visitors: Bo Jackson Visitors: Visitors: Visitors: Visitors: Visitors: Tere there any abnormal operational issues onsite? Tere there any additional supplies/equipment needed? If so, what items and when?	Site Contact:	Sami	my Deam		Present 0	Onsite Activities:	PROCES	SS WATER
Cumulative BBLS Processed: 112,064 bls	Processing Hrs To	odav:	14 hrs	Cumulativ	e Processina I	irs	251	hrs
BBLS/Hr Processed: 429.1428571 Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Chris Perry Reginald White Chemical Usage Start Inv. End Inv. On HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors:								
Lead Operator Crew Ray Lee Chris Perry Reginald White 11:00 100 6.87 10:00 100 6.83 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.89 10:00 100 6.87 100 6.87 100 6.87 100 6.87 100 6.87 100 6.87 100 6.87 100 6.87 100 6.87 100 6.83 100 6.87 100 6.83 100 6.89 100 6.							446.5 bbl/hr	
Lead Operator Crew Ray Lee Chris Perry Reginald White 11:00 100 6.87 10:00 100 6.43 10:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.89 11:00 100 6.76 N/A N/A N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. Or HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Rethere any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there been any changes to the current schedule, including volumes needed by client?	Lead Supervisor:	Sam	my Dean	Readings	flow back	Volts/Amps	рН	Turbidi
Crew Ray Lee Chris Perry Reginald White 12:00 100 6.43 11:00 100 6.89 16:00 100 6.76 N/A N/A N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. Di HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Vis								1.97
Chris Perry Reginald White 12:00 100 6.89 16:00 100 6.76 N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. On HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitor	······································							1.89
Reginald White 14:00 100 6.89 16:00 N/A N/A N/A N/A Chemical Usage Start Inv. End Inv. Or Hcl Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: ere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there been any changes to the current schedule, including volumes needed by client? The company of the current schedule, including volumes needed by client?							6.97	1.78
16:00 100 6.76 N/A N/A N/A Chemical Usage Start Inv. End Inv. On HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: Visitors: ere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there been any changes to the current schedule, including volumes needed by client? The same there been any operational feedback (positive or negative)?			nald White	14:00		100	6.89	1.43
N/A				16:00		100	6.76	1.56
Chemical Usage Start Inv. End Inv. On Hct Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: The there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there here any changes to the current schedule, including volumes needed by client? The there here here here any changes to the current schedule, including volumes needed by client?								N/A
HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: Visitors: ere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there been any changes to the current schedule, including volumes needed by client? The contract of the current schedule, including volumes needed by client?				,				
HcL Acid 525 2,004 1,479 Sodium Hydroxide 598 1,794 1,196 Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: The there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there been any changes to the current schedule, including volumes needed by client? The there been any changes to the current schedule, including volumes needed by client?				Chemical	Usage	Start Inv.	End Inv.	On Ord
Visitors: Bo Jackson Visitors: Visit								no
Visitors: Visitors: Visitors: Visitors: Visitors: Pere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when?	<u> </u>						······	no
Visitors: Visitors: ere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when?	Visitors:	Во	Jackson	, , , , , , , , , , , , , , , , , , , ,				
Visitors: Tere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when?								
Tere there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when? The there are any additional supplies/equipment needed? If so, what items and when?	Visitors:							
the there any additional supplies/equipment needed? If so, what items and when? ave there been any changes to the current schedule, including volumes needed by client? as client provided any operational feedback (positive or negative)?	a de la constanta de la consta			L				
as client provided any operational feedback (positive or negative)?	0				vhen?			
Person: Company: XTO			the current schedu	ile, including volumes ne	eded by client			\$ 18.44 - 19.54 - 19.5
			nal feedback (posit	ive or negative)?				
	as client provided an		nal f ee dback (posit				XTO	

Performed our morning JSA, Proper PPE when handling chemicals. Team work help each other out know where our musting area is. XTO Still trying to get wells back up and online. Placed an order for Caustic will not be here till Friday morning.

Date:	8/1	5/2012		Report	Number:		66
		-,			lumber:		8
Client:)	кто		S	hift Onsite Time:	6:00	am/pm
Location:	Na	ish 29			hift Offsite Time:	6:00 PM	am/pn
Site Contact:	Bo J	lackson				16 hrs	Total hr
Site Contact:	Samr	ny Deam		Present	Onsite Activities	PROCES	S WATER
Processing Hrs T	odav:	16 hrs	Cumulativ	re Processing	Hre-	267	hrs
BBLS Processed		7,282 bbls		BBLS Proces		119,346 bbls	
BBLS/Hr Proces		455.125		BBLS/Hr Proc	***************************************	447.0 bbl/hr	
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		McGruder	08:00		100	6.87	1.97
Crew	Ra	y Lee	10:00		100	6.43	1.89
	Chri	s Perry	12:00		100	6.97	1.78
	Reginald White		14:00		100	6.89	1.43
			16:00		100	6.76	1.56
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Ord
L.			HcL Acid	525	2,004	1,479	no
			Sodium Hydroxide	598	1,794	1,196	no
Visitors:	Bo J	ackson					
Visitors: Visitors:					***************************************		
lere there any abnorr	nal operatio	onal issues onsite	7				
re there any addition	al supplies/	equipment neede	d? If so, what items and v	vhen?			
ave there been any c	hanges to t	he current sched	ule, including volumes ne	eded by client	7		
		ol foodback (nool				79456	
se client provided an		IN IEEUDACK (DUSI	uve of flegative)		diAssissibate James		man person
as client provided an	y operation		Company:			XTO	ALE SILL

Date:	8/1	16/2012		Report	Number:		37
					umber:		8
Client:		хто		CI	nift Onsite Time:	6:00	am/pm
Location:		ash 29			ift Offsite Time:	6:00 PM	am/pm
Site Contact:		Jackson		- 31	int Onsite rine.	11 hrs	Total hrs
Site Contact:	·-··	my Deam		Present (Onsite Activities:		S WATER
100 t							
Processing Hrs 1		11 hrs		e Processing		278	hrs
BBLS Processed		3,056 bbls		BBLS Proces			02 bbls
BBLS/Hr Proces	sed:	277.8181818	Cumulative	BBLS/Hr Proce	essed:	436.7	bbl/hr
Lead Supervisor:	Sam	ımy Dean	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator	Eddie	McGruder	08:00		100	6.87	1.97
Crew	R	ay Lee	10:00		100	6.43	1.89
	Chr	ris Perry	12:00		100	6.97	1.78
	Regir	nald White	14:00		100	6.89	1.43
			16:00		100	6.76	1.56
<u> </u>			N/A		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
	······		HcL Acid	355	1,479	1,124	no
Visitors:		Jackson	Sodium Hydroxide	266	1,196	930	Yes
Visitors:		Jackson					
Visitors:							
Vere there any abnor			? d? If so, what items and the son items are son items and the son items are son items a	when?			
lave there been any o	hanges to	the current sched	ule, including volumes ne	eded by client			
as client provided a						XTO	

G&K. Had to repair 4 " valve screws broke off. Bought to C Clamps to fix valve. Acid arrive to location. Third party truck broke down on location.

Date:	8/17	7/2012		Report	Number:		68
					lumber:		8
			,				
Client:		то			hift Onsite Time:	6:00	am/pm
Location:		sh 29		S	nift Offsite Time:	6:00 PM	am/pr
Site Contact:		ackson		BPS005 ₀₀ 5400	**************************************	4 hrs	Total hr
Site Contact:	Samm	ny Deam	l	Present	Onsite Activities:	PROCES	SS WATER
Processing Hrs 1	Гoday:	4 hrs	Cumulativ	e Processing	Hrs:	282	hrs
BBLS Processed	Today:	1,009 bbls	Cumulative	BBLS Proces	sed:	122,411 bbls	
BBLS/Hr Proces	sed:	252.25	Cumulative I	BBLS/Hr Proc	essed:	434.1 bbl/hr	
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Eddie N	McGruder	08:00		100	6.87	1.97
Crew	Ra	y Lee	10:00		100	6.43	1.89
	Chris	s Perry	12:00		100	6.97	1.78
	Reginald White	ald White	14:00		100	6.89	1.43
			16:00		100	6.76	1.56
<u> </u>			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	150	1,124	974	no
			Sodium Hydroxide	130	3,930	3,800	Yes
Visitors:	Bo Ja	ackson					
Visitors:							
Visitors:							
	mal operatio	nal issues onsite)?	X-27 (44)			
ere there any abnor							
ere there any abnor							
			MANUAL VIII VIII VIII VIII VIII VIII VIII VI				
)	al supplies/	equipment needs	ed? If so, what items and w	vhén?			
0	ial supplies/	equipment neede	ed? If so, what items and w	vhen?	TOTAL MARKET STATE OF THE STATE		
e there any addition					a de Santa	TOTAL TOTAL	
e there any addition			ed? If so, what items and w		ON OTHER DESIGNATION OF THE PERSON OF THE PE		7 - 15 may 2 m
e there any addition					Property and		
e there any addition	changes to ti	he current sched	ule, including volumes ne		Programmer		
e there any addition	changes to ti	he current sched	ule, including volumes ne		Property Street	XTO	
e there any addition we there been any o	changes to ti	he current sched	ule, including volumes ned		?	XTO	

Date:	0/10	3/2012		Dane	Number T		 39
Date:	8/18	5/2012			Number: lumber:		8
				Other	iumber.		0
Client:	×	то		S	hift Onsite Time:	6:00	am/pm
Location:	Na	sh 29		S	nift Offsite Time:	6:00 PM	am/pm
Site Contact:	Bo J	ackson				6 hrs	Total hrs.
Site Contact:	Samn	ny Deam		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs	Foday:	6 hrs	Cumidafiy	e Processing	Hre:	288	hrs
BBLS Processed		2.885 bbls	· · · · · · · · · · · · · · · · · · ·	BBLS Proces			6 bbls
BBLS/Hr Proces		480.8333333		BBLS/Hr Proc		435.1 bbl/hr	
Tand Commission	Comp	ny Doon	**************************************	ma. ve.at.	Alaka IA	211	Traditalia
Lead Supervisor: Lead Operator		ny Dean McGruder	Readings: 08:00	flow back	Volts/Amps 100	pH 6.87	Turbidity 1.97
Crew		y Lee	10:00		100	6.43	1.89
C1 (144			12:00	<u> </u>	100	6.43	1.78
<u> </u>	Chris Perry Reginald White		14:00	·	100	6.89	1.43
 -	Reginald White		16:00		100	6.76	1.56
			N/A		N/A	N/A	N/A
-						e 11	0.01
-			Chemical	Usage	Start Inv.	End Inv.	On Order
L			HcL Acid Sodium Hydroxide	305 250	974 3,800	669	yes
Visitors:	Bo I	ackson	Sodium Hydroxide	250	3,800	3,550	No
Visitors:		ackson					
Visitors:		***************************************					
Vere there any abnor							
te there any addition			d? If so, what items and v		<u> </u>		
ave there been any	ananges to t	ne current acheuc	ile, including volumes ne	eded by cherk			
ave there been any o			*** · · · · · · · · · · · · · · · · · ·				
	ny operation	al feedback (posit	tive or negative)?			A.: 100 M	28 (S. 27 C)
lave there been any of the last client provided a Person:	ny operation	al feedback (posit	tive or negative)? Company:			хто	

Date:	9/10	/2012	ſ	Report	Number:	7	0
Date.	0/13	/2012		i dada da karatara karatari ka	lumber:		3
			L				
Client:	X	то		SI	hift Onsite Time:	6:00	am/pm
Location:	Nas	sh 29		SI	nift Offsite Time:	6:00 PM	am/pm
Site Contact:	Bo Ja	ackson					
Site Contact:	Samm	ny Deam		Present (Onsite Activities:	PROCES	S WATER
Processing Hrs T	odav:	4 hrs	Cumulativ	e Processing	Hrs:	292	hrs
BBLS Processed		1.009 bbls		BBLS Proces		126,30	5 bbls
BBLS/Hr Proces		252.25		BBLS/Hr Proc		432.6	bbl/hr
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	pH	Turbidit
Lead Operator		McGruder	08:00		100	6.87	1.97
Crew	.,	y Lee	10:00		100	6.43	1.89
		s Perry	12:00		100	6.97	1.78
		ald White	14:00		100	6.89	1.43
			16:00		100	6.76	1.56
			N/A		N/A	N/A	N/A
	*****		Chemical	Usage	Start Inv.	End Inv.	On Ord
-			HcL Acid	125	3,669	3,544	yes
L			Sodium Hydroxide	150	3,550	3,400	No
Visitors:	Bo J	ackson					
Visitors:							
Visitors:							
lere there any abnor o			ed? If so, what items and	when?	Oddina.		
re there any addition							
	hanges to t	he current sched	lule, including volumes ne	eded by clien			
ave there been any o			sitive or negative)?	eded by clien		VIO	
				eded by clien		хто	

Date:	8/20	0/2012		Report	Number:		71	
		•	Į		lumber:		8	
Client:		то	ſ	S	hift Onsite Time:	6:00	am/pm	
Location:		sh 29			hift Offsite Time:	6:00 PM	am/pm	
Site Contact:	Bo J	ackson				12 hrs	Total hrs.	
Site Contact:	Samn	ny Deam		Present	Onsite Activities:	Maintenance		
Maint on Unit								
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing	Hrs:	292	hrs	
BBLS Processed	roday:	0 bbls	Cumulative	BBLS Proces	ssed:	126,30	05 bbls	
BBLS/Hr Proces	sed:	#DIV/0!	Cumulative I	3BLS/Hr Proc	essed:	432.6 bbl/hr		
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidity	
Lead Operator	Eddie I	McGruder	08:00		100	6.87	1.97	
Crew	Ra	y Lee	10:00		100	6.43	1.89	
	Chri	s Perry	12:00		100	6.97	1.78	
	Regina	ald White	14:00		100	6.89	1.43	
			16:00		100	6.76	1.56	
<u> </u>			N/A		N/A	N/A	N/A	
			Chemical	Usage	Start Inv.	End Inv.	On Order	
			HcL Acid	0	3,544	3,544	yes	
			Sodium Hydroxide	0	3,400	3,400	No	
Visitors:	Bo J	ackson						
Visitors:								
Visitors:								
Were there any abnor	nal operatio	onal issues onsite	?	4.82.22. 1 - 1.c.		100		
No Are there any addition	al supplies/	equipment needs	ed? If so, what items and w	vhen?				
Have there been any c	hanges to t	he current sched	ule, including volumes ne	eded by client	?			
							77 ** St. 533 (3000)	
The second secon	ıy operation	al feedback (pos	itive or negative)?			1100000		
Has client provided ar Person:	y operation	al feedback (pos	Company:	1997 byg.		хто		

	8/2	21/2012	[Report	Number:	7	72
Date:	- 0,2	172012			lumber:		8
Client:		XTO	[S	hift Onsite Time:	5:00	am/pm
Location:	N	ash 29		SI	nift Offsite Time:	11:00 PM	am/pm
Site Contact:	Во	Jackson			STANFORD OF	18 hrs	Total hrs
Site Contact:	Sam	my Dean	l	Present	Onsite Activities:	PROCES	S WATER
Processing Hrs T	odav:	8 hrs	Cumulativ	e Processing	Hrs:	300	hrs
BBLS Processed		3,208 bbls		BBLS Proces		129,51	3 bbls
BBLS/Hr Proces	the order of the same of the s	401	Cumulative I	BBLS/Hr Proc	essed:	431.7 bbl/hr	
Lead Supervisor:	Som	ımy Dean	Readings:	flow back	Volts/Amps	pH	Turbidit
Lead Operator		ris Perry	16:30	HOW DACK	110	7.54	0.64
Crew	······	nald White	18:30		110	7.34	1.67
CICYY	ivegii	and TTING	20:30		110	7.02	1.67
			22:30		110	7.34	1.25
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	400	5,300	4,900	No
L			Sodium Hydroxide	350	2,980	2,630	No
Visitors:	Во	Jackson					
Visitors:							
Visitors:							
					and the second s	NEWS 11 COMMUNICATION AND	
re there any addition			od? If so, what items and v	vhen?			
lo	nal supplies	s/equipment neede				7416	
re there any addition to lave there been any o	nal supplies	s/equipment neede	d? If so, what items and vule, including volumes ne			The .	72 70 40 70
re there any addition	nal supplies	s/equipment neede	d? If so, what items and v		?	хто	

Date:	8/22/	2012	Ī	Report	Number:		73
Date.	0/22/	2012			lumber:		8
			•				
Client:	TX	·o		S	hift Onsite Time:	9:00	am/pm
Location:	Nas	h 29		S	hift Offsite Time:	4:00 PM	am/pm
Site Contact:	Bo Ja	ckson				7 hrs	Total hrs
Site Contact:	Samm	y Dean		Present	Onsite Activities:	PROCES	S WATER
Processing Hrs To	oday:	3 hrs	Cumulativ	e Processing	Hrs;	303	hrs
BBLS Processed To		1,419 bbls	Cumulative	BBLS Proces	ssed:	130,9	32 bbls
BBLS/Hr Process	ed:	473	Cumulative	BBLS/Hr Proc	essed:	432.1	bbl/hr
Lead Supervisor:	Samm	y Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		Perry	11:30		110	7.69	1.94
Crew		ld White	13:30		110	6.98	0.44
			15:30		110	7	1.67
			15:44		110	6.89	0.24
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	200	4,900	4,700	No
<u> </u>			Sodium Hydroxide	175	2,630	2,455	No
Visitors:	Bo Ja	ckson					
Visitors:							
Visitors:							
Vere there any abnorn No	nal operatio	nal issues onsitr	9?				
Are there any additional	al supplies/e	equipment need	ed? If so, what items and	when?			
Have there been any c	hanges to ti	ne current sched	lule, including volumes ne	eeded by clien	t?		
		al facelhank (nos	Hive or negative)?				
dae aliant provided en					1	хто	
las client provided an			Company:	The second second			
Has client provided an Person:			Company:				

Date:	0/1	23/2012	ſ	Se Banas	Number:		74	
Date:	8/2	3/2012		and the second second second	lumber:		8	
			,					
Client:		XTO	1	S	hift Onsite Time:	10:00	am/pm	
Location:		ash 29			nift Offsite Time:	7:00 PM	am/pm	
Site Contact:	Во、	Jackson	Ì			9 hrs	Total hr	
Site Contact:	Sam	my Dean		Present	Onsite Activities:	PROCES	SS WATER	
		r has		e Processing	The same of the sa	308	hrs	
Processing Hrs T		5 hrs 2.648 bbls		BBLS Proces				
BBLS Processed 1 BBLS/Hr Proces		529.6		BBLS/Hr Proc	The second contract of	133,580 bbls 433.7 bbl/hr		
DDL3/HT Proces	seu.	529.6	Culliulauve	DBEG/HI FIOC	raseu.	400.1	DDI/III	
Lead Supervisor:	Sam	my Dean	Readings:	flow back	Volts/Amps	рН	Turbidit	
Lead Operator		ris Perry	13:00	mon back	110	6.44	1.05	
Crew		nald White	15:00		110	7.03	0.381	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		17:00		110	7.14	0.668	
			18:00		110	7	0.553	
<u> </u>			N/A		N/A	N/A	N/A	
			N/A		N/A	N/A	N/A	
					<u> </u>			
			Chemical	Usage	Start Inv.	End Inv.	On Orde	
			HcL Acid	150	4,700	4,550	No	
<u></u>			Sodium Hydroxide	375	2,455	2,080	No	
Visitors:	Во	Jackson						
Visitors:								
Visitors:								
fere there any abnor	mal operati	ional issues onsite	?					
ain and wind								
3000						COMMO NOCESIA		
	al supplies	s/equipment neede	d? If so, what items and v	when?				
0								
			ula dankudlara valumos no	adad by alian	9 7 62222	600 CONTRACTOR	3518/03/16/	
	hanass to	Life Currellt Scheat	are, including volumes ne	eded by chem	**************************************	1 A. a. 14788		
ave there been any o	hanges to							
ave there been any o	hanges to							
	hanges to							
0			tive or negative)?					
O as client provided as				and the second		XTO		
			tive or negative)? Company:		Ī	хто		
as client provided at Person:	ny operatio					хто		

Date:	8/74	/2012		Rennet	Number:	7	75
2010.1	0,24,	72012			lumber:		В
Client:		то	1		en outer travel	10.00	/
Location:		h 29			hift Onsite Time: nift Offsite Time:	10:00 7:00 PM	am/pm
Site Contact:		ickson		SI	int Offsite Time:	9 hrs	am/pm Total hrs.
Site Contact:		y Dean		Present (Onsite Activities:		S WATER
* 0 : : : : : : : : : : : : : : : : : :							
Processing Hrs To		0 hrs		re Processing		308	hrs
BBLS Processed T		0 bbls	Charles of the Control of the Contro	e BBLS Proces		133,58	0 bbls
BBLS/Hr Process	ed:	0	Cumulative	BBLS/Hr Proce	essed:	433.7	bbl/hr
Lead Supervisor:	Samm	y Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		Perry	13:00		N/A	N/A	N/A
Crew	Reginal	d White	15:00		N/A	N/A	N/A
			17:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
L_			HcL Acid	0	4,700	4,550	No
			Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Ja	ckson					
Visitors:							
Visitors:							
Were there any abnorm	nal operation	nal issues onsit	e?	- 2000	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
	il supplies/e	quipment need	ed? If so, what items and v	when?			S. Marriero
Are there any additions No Have there been any ch			ed? If so, what items and v		?		
Are there any additiona No Have there been any ch	nanges to th	e current sched	lule, including volumes ne		?		
Are there any additions No	nanges to th	e current sched	lule, including volumes ne		?	XTO	

Fixed 4" line for system one on Brown Bear. Spoke with Mr. Bo Jackson, about how Oil got into Poseidon tank. He is not for sure, but do know that there was 3 rd party trucks taking water from XTO Nash Draw Unit # 47 H and unloading it in Poseidon tank. Do not know if those trucks was clean before doing this. Took samples of influent and enfluent, took to Hobbs Yard to be sent to Houston. Poseidon tank is at 136.5" at this time. Recommend to not suck Poseidon tank no lower than 10 inches for frac job.

				12. 7. 7. 7. 7. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.		
Date:	8/25/2012			Number:		76
			Unit	Number:		8
Client:	XTO		,	hift Onsite Time:	8:00	am/pn
Location:	Nash 29	 		hift Offsite Time:	5:00 AM	am/pn
Site Contact:	Bo Jackson			Time Original Times	9 hrs	Total hr
Site Contact:	Sammy Dean		Present	Onsite Activities:		tenance

Processing Hrs T			e Processing		308	hrs
BBLS Processed 1		Cumulative	BBLS Proce	ssed:	133,5	80 bbls
BBLS/Hr Proces	sed: 0	Cumulative l	BBLS/Hr Proc	essed:	433.7	bbl/hr
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	pН	Turbidi
Lead Operator	Chris Perry	13:00		N/A	N/A	N/A
Crew	Reginald White	15:00		N/A	N/A	N/A
		17:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Ord
		HcL Acid	0	4,700	4,550	No
		Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Jackson					
Visitors:						
Visitors:						
ere there any abnor	nal operational issues o	nsite?				
e there any addition	al supplies/equipment n	eeded? If so, what items and v	vhen?			
)						
	nanges to the current so	chedule, including volumes ne	eded by clien	<u> </u>	100	<u> 1900 est 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</u>
)					- Contract of the Contract of	
s client provided an	y operational feedback (19		V-100 (200 SA) 8 TO 100 CO	30.000.045	MAZIS.
	y operational feedback ((positive or negative)? Company:	7.5		хто	
is client provided an		19			хто	Name of the last o

	8/26/2012	ו ר	Ponort	Number:	7	7
Date:	8/26/2012	1		umber:		8
Client:	XTO	ר ו		nift Onsite Time:	10:00	am/pm
Location:	Nash 29	-		ift Offsite Time:	7:00 PM	am/pm
Site Contact:	Bo Jackson	-	egysta transferance	int Onsite ringe.	9 hrs	Total hr
Site Contact:	Sammy Dean]	Present (Onsite Activities		enance
777	Todav: 0 hrs	1	e Processing	g	308	hrs
Processing Hrs T BBLS Processed	The state of the s		BBLS Proces			30 bbls
BBLS/Hr Proces			BBLS/Hr Proce			bbl/hr
DDL3/III F10Ces	seu. 0	Continuative	BBC3/HL F TOCK	oseu.	455.7	- DDB/111
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Chris Perry	13:00		N/A	N/A	N/A
Crew	Reginald White	15:00		N/A	N/A	N/A
		17:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	4,700	4,550	No
<u>-</u>		Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Jackson					
Visitors:						
Visitors:						
				······································		
	mal operational issues onsi	te?	- cost programma		Matters : Scooling	827 : : :
lo						
re there any addition	al supplies/equipment need	ded? If so, what items and y	when?		5.458866.Y.S.	U 1881/45/20
	nal supplies/equipment need	ded? If so, what items and v	when?			
	nal supplies/equipment need	ded? If so, what items and v	when?			
Are there any addition No	nal supplies/equipment need	ded? If so, what items and v	when?			
No				?		
No	changes to the current sche					
lave there been any o	changes to the current sche					
lave there been any o	changes to the current sche	dule, including volumes ne		The state of the s		
lave there been any o	changes to the current sche	dule, including volumes ne		Property of the second	ATIO	
lave there been any of Standy- by as per custo Has client provided a	changes to the current sche	dule, including volumes ne			XTO	

Date:	8/27/	2012		Report	Number:		78
and the state of t	-, ,			######################################	lumber:		8
Client:	ХТ	0		S	hift Onsite Time:	8:00	am/pm
Location:	Nash	า 29		S	hift Offsite Time:	5:00 AM	am/pm
Site Contact:	Bo Jac	ckson				9 hrs	Total hrs.
Site Contact:	Sammy	/ Dean		Present	Onsite Activities:	Main	tenance
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing	Hrs:	308	hrs
BBLS Processed		0 bbls	MINISTER OF THE PROPERTY OF TH	BBLS Proces		133,5	80 bbls
BBLS/Hr Proces		0	Cumulative l	BBLS/Hr Proc	essed:	433.7	bbl/hr
7747384 2 55305555					In the second of		
Lead Supervisor:	Sammy		Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator Crew	Chris I		13:00		N/A	N/A	N/A
CIEW	Reginalo	a vviille	15:00		N/A	N/A	N/A
-			17:00 18:00		N/A	N/A	N/A
			N/A		N/A N/A	N/A N/A	N/A N/A
-			N/A		N/A N/A	N/A	N/A
			IVA		N/A	IV/A	IN/A
			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	4,700	4,550	No
			Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Jac						
Visitors:	Todd (_ -					
Visitors:	Arron K	archer					
/ 4t		-11					SPENDAR JUGAR
Vere there any abnorr	nal operation	al issues onsit	97		4	7.2	
*0							

re there any addition	al eunnlige/or	nuinment need	ed? If so, what items and v	rhan?			gar Pereggina
lo	ai supplies/ec	quipment nece	sur ii 90, what items and r	indir.			W. C. 7
10							
					,		
			ule, including volumes ne	eded by client	?	7.25	
	hanges to the	e current sched			**************************************	SMEET OF THE STATE	
		e current sched					
lave there been any c		e current sched					
lave there been any c		e current sched					
lave there been any c Standy- by as per custo Has client provided an	mer request				The second secon	. Johnson v. 1988	
lave there been any control of the c	mer request					хто	
lave there been any c Standy- by as per custo Has client provided an	mer request		itive or negative)?			хто	
lave there been any citandy- by as per custo las client provided an Person:	mer request		itive or negative)?	- Period - Control - Contr		хто	

started leaking from seams. Mr. Randy Green, is going to have some of the water transferred to XTO Nash Draw 49 H and some to XTO Nash Draw Unit # 57 H.

Date:	8/28/2012		Dankel	Number:		79
Vaic.	8/28/2012			Number:		8
		ı				
Client:	XTO			hift Onsite Time:	8:00	am/pm
Location:	Nash 29		S	hift Offsite Time:	5:00	am/pm
Site Contact:	Bo Jackson				9 hrs	Total hrs
Site Contact:	Sammy Dean		Present	Onsite Activities:	Main	tenance
Processing Hrs T	oday: 0 hrs	Cumulativ	e Processing	Hrs:	308	hrs
BBLS Processed			BBLS Proce			80 bbls
BBLS/Hr Proces			BBLS/Hr Proc		<u> </u>	bbl/hr
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	На	Turbidity
Lead Operator	Chris Perry	13:00	HOW DOLK	N/A	N/A	N/A
Crew	Reginald White	15:00		N/A	N/A N/A	N/A N/A
U. C. 1	noginal Wille	17:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		N/A		N/A	N/A	N/A
		Chemical	Neage	Start Inv.	End Inv.	On Orde
		HcL Acid	Usage 0	4,700	4,550	No
<u> </u>		Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Jackson	30didiii 77ydr0xide		2,433	2,080	IVO
Visitors:	DO GORGON					
Visitors:				†		
	mal operational issues on on developed 2 leaks. Ope	site? site? ration has been on standby unt	il leaks can be	repaired		
re there any addition	al supplies/equipment ne	eded? If so, what items and w	vhen?			
		nedule, including volumes ne	eded by clien	13		
tandby as per custome	er request					
as client provided an	ny operational feedback (p	positive or negative)?	tere with triels 7.	e Ca Congresso de la companyo de la	- Trikalejokti	
Person:	•	Company:			XTO	

lo						

Date:	8/29/2	012		Report	Number:	ş	30
	0,23,2				Number:		8
					Constitution of the second		
Client:	XTC				hift Onsite Time:	8:00	am/pm
Location:	Nash			3	hift Offsite Time:	5:00	am/pm
Site Contact:	Bo Jacl Sammy			Present	Onsite Activities:	9 hrs Mainte	Total hrs enance
	Cumny	<u>Journal</u>	l	1/(OOOne	Ottolic Houvilles.	Wall	onanoc
Processing Hrs T	oday:	0 hrs	Cumulativ	e Processing	Hrs:	308	hrs
BBLS Processed T	oday:	0 bbls	Cumulative	BBLS Proces	ssed:	133,58	30 bbls
BBLS/Hr Process	sed:	0	Cumulative	BBLS/Hr Proc	essed:	433.7	bbi/hr
Lead Supervisor:	Sammy	Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Chris P	erry	13:00		N/A	N/A	N/A
Crew	Reginald	White	15:00		N/A	N/A	N/A
			17:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			N/A		N/A	N/A	N/A
-			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
L_			HcL Acid	0	4,700	4,550	No
			Sodium Hydroxide	0	2,455	2,080	No
Visitors:	Bo Jaci	kson					
Visitors:							
Vere there any abnorr			? on has been on standby unt	til leaks can be	repaired		
re there any addition	al supplies/eq	uipment neede	d? If so, what items and v	when?			
lave there been any c	hanges to the	current schedu	ile, including volumes ne	eded by client	?		
tandby as per custome	er request						
			6.5.5.5.5.5.4.4.4.4.4.4.4.4.4.4.4.4.4.4.				
las allant seculal-d	y operational	тееораск (ровг	Company:			хто	2500.5341777
las client provided an			. Company	5 24 09 5 95	1	Λ10	
Person:							

Date:	8/30/	2012	ſ	Dance	Number:		81	
Date:	8/30/	2012			lumber:		8	
			'	<u> </u>				
Client:	XT	0		S	hift Onsite Time:	8:00	am/pm	
Location:	Nash	1 29		SI	nift Offsite Time:	5:00	am/pm	
Site Contact:	Bo Jac	ckson			944	9 hrs	Total hr	
Site Contact:	Sammy	Dean		Present (Onsite Activities:	Maint	enance	
			escondos de la companya de la compa		N	200		
Processing Hrs T		0 hrs		e Processing		308	hrs	
BBLS Processed T		0 bbls		Cumulative BBLS/Hr Processed: 133,580 bb/				
BBLS/Hr Process	sea:	0	Cumulative i	SBLS/HF Proc	essed:	433.7	DDI/IT	
Lead Supervisor:	Sammy	Dean	Readings:	flow back	Volts/Amps	рН	Turbidit	
Lead Operator	Chris	Perry	13:00		N/A	N/A	N/A	
Crew	Reginal		15:00		N/A	N/A	N/A	
			17:00		N/A	N/A	N/A	
			18:00		N/A	N/A	N/A	
			N/A		N/A	N/A	N/A	
			N/A		N/A	N/A	N/A	
-			Chemical	Usage	Start Inv.	End Inv.	On Ord	
			HcL Acid	0	4,700	4,550	No	
<u> </u>			Sodium Hydroxide	0	2,455	2,080	No	
Visitors:	Bo Jac	ckson						
Visitors:								
Visitors:								
ere there any abnorr						1964 - E. B.		
	on doveloped	z round. Operan	on has been on standby unt	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· · · · · · · · · · · · · · · · · · ·			
re there any addition	al supplies/e	quipment neede	ed? If so, what items and v	vhen?			2882 2782-3-3-3	
	al supplies/e	quipment neede	ed? If so, what items and v	/hen?			All Control of the Co	
re there any addition.					2			
re there any addition.	hanges to the		ed? If so, what items and v		?			
re there any addition o ave there been any c	hanges to the				2			
re there any addition. ave there been any clandby as per custome	hanges to the	e current sched	ule, including volumes ne itive or negative)?		2			
re there any addition o ave there been any c	hanges to the	e current sched	ule, including volumes ne		2	XTO		

should be able to start cleaning water on Friday 31st Day Of August 2012, sometime that evening.

Date:	8/31	1/2012			Number:		2
				Unit N	lumber:		3
Client:	X	то	ſ	S	hift Onsite Time:	12:00:00PM	am/pm
Location:	Na	sh 29		SI	nift Offsite Time:	0:00	am/pm
Site Contact:	Bo J	ackson				12 hrs	Total hrs
Site Contact:	Samn	ny Dean		Present	Onsite Activities	Processi	ng Water
Processing Hrs T	odav:	10 hrs	Cumulativ	Processing	Hrs:	318	hrs
BBLS Processed		5,125 bbls		BBLS Proces			5 bbls
BBLS/Hr Proces		512.5		BLS/Hr Proc			bbl/hr
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Chris	s Perry	14:00		110	5.31	0.116
Crew	Regina	ald White	16:00		110	6.54	0.864
			18:00		110	7.01	0.747
			20:00		110	6.57	1.8
			22:00		110	7.2	2.12
			N/A		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	4,550	4,200	No
			Sodium Hydroxide	0	2,080	1,800	No
Visitors:	Bo J	ackson					
Visitors:	······································						
Vere there any abnor	mal operatio	onal issues onsite			e e de decida		
re there any addition	al supplies/	equipment neede	d? If so, what items and v	rhen?			
lave there been any o	changes to t	he current sched	ule, including volumes ne	eded by client	?		
	ny operation	al feedback (posi	itive or negative)?		I	VIO	
			Company:	Compage Angelege A	<u> </u>	XTO	
Person:							

Date:	9/1	/2012		Report	Number:	8	3
			Ī		Number:		3
Client:		(TO	ſ	Section 2	hift Onsite Time:	12:00:004M	am/pm
Location:		sh 29			hift Offsite Time:	21:00	am/pm
Site Contact:		ackson			mic Onsite Time.	11 hrs	Total hrs
Site Contact:		ny Dean		Present	Onsite Activities:		ng Water
		0 ba		Processing	•	227	hee
Processing Hrs T BBLS Processed		9 hrs 6,101 bbls		BBLS Proce		327	hrs 1 bbls
BBLS/Hr Proces		512.5	Cumulative E				bbl/hr
DDL3/HI Proces	seu.	512.5	Cumulauve	BLAINI FIOC	esseu.	421.2	DDI/III
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		s Perry	00:00		110	6.8	0.886
Crew		ald White	02:00		110	7	0.968
			13:00		110	7.65	1.11
			15:00		110	7.26	1.26
			17:00		110	6.8	1.57
			19:00		110	6.654	2.47
			21:00		110	6.75	2.23
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	4,200	3,800	No
			Sodium Hydroxide	0	1,800	1,500	Yes
Visitors:	Bo J	ackson					
Visitors:							
Visitors:					<u> </u>		
Vere there any abnor lo	mal operatio	onal issues onsite	Passis Harrings St.				z
re there any addition	al supplies	equipment neede	ed? If so, what items and w	/hen?			284 g) . T.
lo							
	hanges to t	he current sched	ule, including volumes ne	eded by clien	17		Table of the Control
lave there been any o	hanges to t	he current sched	ule, including volumes ne	eded by clien		The second secon	
lave there been any o				eded by clien			
lave there been any o				eded by clien		Treated to the same of the sam	

Date:	9/2	2/2012		Report	Number:	3	34
		,			lumber:		8
Client:		кто	[S	nift Onsite Time:	6:00:00AM	am/pm
Location:	Na	sh 29		SI	nift Offsite Time:	18:00	am/pm
Site Contact:	Bo J	lackson			CONTRACTOR	12 hrs	Total hr
Site Contact:	Samr	ny Dean	I	Present (Onsite Activities:	Process	ing Water
Processing Hrs	Today:	8 hrs	Cumulativ	e Processing	Hrs:	335	hrs
BBLS Processed		4,483 bbls		BBLS Proces			3 bbls
BBLS/Hr Proces		512.5		BLS/Hr Proce			bbl/hr
· • · · · · · · · · · · · · · · · · · ·					Washington and the second		VICE - march - \$4.00 (\$4.00)
Lead Supervisor:		my Dean	Readings:	flow back	Volts/Amps	pH 7.56	Turbidit
Lead Operator		eth Erler	08:00		108	7.56	1.15
Crew	Fermi	n Valdez	10:00		108	7.35	1.12
<u> </u>			12:00		108	7.89 7.46	1.37
_			14:00 16:00:00 PM		108 108	6.8	1.24
-			18:00:00 PM		108	6.654	2.47
<u> </u>			18.00.00 FW		108	0.034	2.47
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	3,800	3,500	No
			Sodium Hydroxide	0	1,500	1,200	Yes
Visitors:	Bo J	lackson					
Visitors:							
Visitors:							

	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				J. C.	V 17237 1 131423	
lere there any abnor o	mal operation	onal issues onsite					
U							

	-1						
	nal supplies/	equipment needed	1? If so, what items and w	hen?			
re there any addition	nal supplies/	equipment needed	d? If so, what items and w	hen?			· · · · · · · · · · · · · · · · · · ·
	nal supplies	equipment needed	1? If so, what items and w	rhen?			
0					3		See
o ave there been any (1? If so, what items and w		?		XID YES
0					?	TEACH COMPANY	No.
o ave there been any (?		Mahadini Sensekhan A
ave there been any o	changes to t	the current schedu	ile, including volumes ned		?		4 (a), (b), (c)
ave there been any o	changes to t	the current schedu	ile, including volumes ned		?	XTO	T. Co. 15
ave there been any o	changes to t	the current schedu	ile, including volumes ned		?		

Date:	9/3	/2012	[Report	Number:	8	5	
	3/3	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			umber:		3	
Client:	>	TO		SI	nift Onsite Time:	6:00:00AM	am/pm	
Location:	Na	sh 29		Sh	ift Offsite Time:	19:00	am/pm	
Site Contact:	Bo J	ackson				11 hrs	Total hrs	
Site Contact:	Samr	ny Dean	l	Present (Onsite Activities:	Processi	ng Water	
Processing Hrs	Today:	6 hrs	Cumulativ	e Processing I	Hrs:	341	hrs	
BBLS Processed		4,394 bbls		BBLS Proces		137,97	,974 bbls	
BBLS/Hr Proce		512.5	Cumulative I	BBLS/Hr Proce	essed:	404.6	bbl/hr	
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidity	
Lead Operator		eth Erler	08:00		108	6.86	0.886	
Crew		n Valdez	10:00		108	6.9	0.965	
		MrGruder	12:00		108	7.54	1.116	
		y Lee	14:00		108	7.68	1.24	
			16:00:00 PM		108	7.43	1.032	
			Chemical	Usage	Start Inv.	End Inv.	On Order	
			HcL Acid	0	3,500	3,200	No	
			Sodium Hydroxide	0	1,200	900	Yes	
Visitors:	Bo J	ackson						
Visitors:								
Visitors:								
Vere there any abno	rmal operatio	onal issues onsite						
0								
i re there any additio Io	nai supplies	equipment neede	d? If so, what items and v	vnen :				
lave there been any	changes to t	he current schedu	ule, including volumes ne	eded by client	9			
lo								
las client provided a	ny oneration	al feedback (nosi	five or negative)?					
	y operaciói	ini icennack (bosi	Company:		***************************************	хто		
Person:								

Date:	0//	/2012	r	Ponad	Number:	<u> </u>	36
Date.	3/4	72012			umber:		8
			•				
Client:	>	кто	[SI	nift Onsite Time:	6:00:00AM	am/pm
Location:	Na	ısh 29		St	ift Offsite Time:	18:00	am/pm
Site Contact:	Во	lackson				12 hrs	Total hrs
Site Contact:	Samı	my Dean	Į.	Present (Onsite Activities:	Process	ing Water
Processing Hrs	Today:	9 hrs	Cumulativ	e Processing I	irs:	350	hrs
BBLS Processed		4,844 bbls		BBLS Proces		138,424 bbls	
BBLS/Hr Proce		512.5		BLS/Hr Proce			bbl/hr
Lead Supervisor:	Samı	my Dean	Readings:	flow back	Volts/Amps	ρН	Turbidit
Lead Operator		eth Erler	08:00		108	7.89	2.12
Crew	Ferm	in Valdez	10:00		108	6.9	0.892
	Ra	y Lee	12:00		108	7.35	0.992
Γ			14:00		108	7.55	1.69
			16:00:00 PM		108	7.12	1.21
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	3,200	2,900	No
L			Sodium Hydroxide	0	900	600	Yes
Visitors:	Во	Jackson	, , , , , , , , , , , , , , , , , , ,				
Visitors:	·						
Visitors:							
/ere there any abno o	ormal operati	onal issues onsite					
re there any addition	onal supplies	/equipment neede	ed? If so, what items and w	vhen?			
	changes to	the current sched	ule, including volumes ne	eded by client	?		
0							
as client provided	any operation	nal feedback (pos	itive or negative)?		peker Ligg		
Person:			Company:			XTO	
1 0,0011							
0							

Date:	9/5/2	012	1	Report	Number:	۶	37
2	37372				lumber:	8	
Client:	XTO		ſ	C	hift Oorita Tima.	6:00:00AM	2m/nm
Location:	Nash				hift Onsite Time: nift Offsite Time:	0:00	am/pm am/pm
Site Contact:	Bo Jac			اد	int Offsite Time.	18 hrs	Total hrs
Site Contact:	Sammy			Present (Onsite Activities:		ing Water
Processing Hrs	Today:	12 hrs	Cumulativ	Processing	Hree States of the Control	362	hrs
BBLS Processed		5,113 bbls	Middle Strate Committee Co	BBLS Proces			0 bbls
BBLS/Hr Proces		512.5		BLS/Hr Proc			bbl/hr
Lead Supervisor:	Sammy	Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Kenneth		08:00		108	6.54	0.158
Crew	Fermin \	/aldez	10:00		108	6.84	0.872
L	Ray L		12:00		108	7.25	1.01
_	Adam P		14:00		108	7.35	1.15
	Eddie Mc	Gruder	20:00		108	7.21	1.21
-			22:00		108	7.85	1.52
			Chemical	Usage	Start Inv.	End Inv.	On Orde
L_			HcL Acid	0	2,900	2,500	No
Visitors:	Bo Jac	kaan	Sodium Hydroxide	0	600	1,425	Yes
Visitors:	Во зас	KSOII					
Visitors:							
Vere there any abnor	mal operation	al issues onsite	* PERSONAL TRANSPORT	32 (8.1) (1.1)	and the state of t		
re there any addition	nal supplies/eq	uipment neede	ed? If so, what items and w	hen?	The second second		
ave there been any	changes to the	current sched	ule, including volumes ne	eded by client	?		
	ny operational	teedback (posi	Company:	24-97-11-12-12-12-12-12-12-12-12-12-12-12-12-		XTO	
			Company.			λIU	
as client provided a Person:							

Date:	9/6/2012	7	Report	Number:		88
***************************************			Unit N	lumber:		8
Client	XTO	ا ر	62.05 S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Nash 29	-		hift Offsite Time:	0:00	am/pm
Site Contact:	Bo Jackson	-			18 hrs	Total hrs
Site Contact:	Sammy Dean] [Present	Onsite Activities:	Process	ing Water
Processing Hrs To	oday: 6 hrs] Comulativ	e Processing		368	hrs
BBLS Processed T			BBLS Proces			26 bbls
BBLS/Hr Process			BBLS/Hr Proc			bbl/hr
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	pН	Turbidit
Lead Operator	Kenneth Erler	08:00	HOW DOCK	108	7.21	0.897
Crew	Fermin Valdez	10:00		108	6.54	0.123
	Ray Lee	12:00		108	7.54	0.998
	Adam Pollard	14:00				
	Eddie McGruder	20:00				
	- 11 - Marketon (1 - 1 - 1	22:00				
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	2,500	2,350	Yes
		Sodium Hydroxide	0	1,425	6,200	No
Visitors:	Bo Jackson					
Visitors:						
Visitors:				<u> </u>		
	nal operational issues ons	ite?			Control of the Contro	
)						

e there any additiona	al supplies/equipment nee	ded? If so, what items and w	/hen?		Barrie San Barriera	
0						
	hanges to the current sche	edule, including volumes ne	eded by client	(?	4	
0						
			experience experience			265 C T T T T T T T T T T T T T T T T T T
is chem provided an	y operational feedback (po	Company:		T	VTO	2-47 - 15000 Agu
		Company.	Alle San Committee Co	L	XTO	
Person:						

lave there been any	y changes to the current sched	fule, including volumes ne		?	XTO	Sept 1
lave there been any	y changes to the current sched	fule, including volumes ne		?	XTO	POSSER
lave there been any	y changes to the current sched	fule, including volumes ne		?		
o ave there been any				**************************************	N. S.	
o ave there been any				?	XXXIII	
lo					988819484 Bala 1 - 48	
	onar supplies/equipment need	over the control of t	ALCHINGS.			
	anal eupplice/aguinment need	ed? If so, what items and v	vhen?			
	n, went to Odessa picked up an			C. ST. ST. ST. ST. ST. ST. ST. ST. ST. ST		i — u — u · u · u · u · u · u · u · u · u
Vere there any abn	ormal operational issues onsit	e?	0.187034.838888			914 (144,43)
Visitors:						
Visitors:	2.7.0011					
Visitors:	Bo Jackson	Soulum nyaroxide	U	6,200	5,800	No
L		HcL Acid Sodium Hydroxide	0	2,350	1,900	Yes
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		22:00	an (4.0.4	108	7.25	0.9
		20:00		108	7.5	0.975
	Eddie McGruder	18:00		108	7.78	1.189
	Adam Pollard	16:00		108	7.32	0.768
	Ray Lee	14:00		108	6.69	0.654
Crew	Fermin Valdez	12:00		108	6.89	0.573
Lead Operator	Kenneth Erler	10:00		108	6.75	0.456
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	pН	Turbidity
	33300.		DULU/(III F 100)	esseu.	700.0	DDI////
BBLS/Hr Proc			BBLS/Hr Proc			bbl/hr
Processing Hrs BBLS Processe			BBLS Proces			nrs 6 bbls
Drocaesina Um	Today: 12 hrs	Summatan.	e Processing	upo.	380	hrs
	Canny Dodn	ı	- receited	- Jito / Touvidos	. 100033	g Trator
Site Contact:	Sammy Dean		Present (Onsite Activities:		ng Water
Site Contact:	Nash 29 Bo Jackson			nift Offsite Time:	0:00 18 hrs	am/pm Total hrs
Client: Location:	XTO			hift Onsite Time:	6:00:00AM	am/pm
A4400000	VTO	1 .				
			Unit N	lumber:	0	
	9/7/2012			Number: lumber:	89 8	
Date:		1				

Went to Odessa and picked up another Brown Bear Unit. Acid did not show up PO was never create. Acid will be on location at 0800 hours on 09-07-2012. XTO is hauling in fresh water for this Frac Job.

Date:	9/8	/2012		Report	Number:	9	90
		,			lumber:		8
Client:	Х	(TO		S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	sh 29		S	hift Offsite Time:	0:00	am/pm
Site Contact:	Bo J	ackson				18 hrs Total h	
Site Contact:	Samn	ny Dean		Present	Onsite Activities:	Process	ing Water
Processing Hrs	Today:	16 hrs	Cumulativ	e Processing	Hrs:	396	hrs
BBLS Processed		6,480 bbls		BBLS Proce		179,38	36 bbls
BBLS/Hr Proces		512.5		BBLS/Hr Proc			bbl/hr
1222 (5.1222)	Comp	Doop.	Dondings	flow back	Volte / Amne	AU .	Turbidity
Lead Supervisor: Lead Operator		ny Dean eth Erler	Readings: 10:00	now back	Volts/Amps 108	pH 7.12	0.789
Crew		n Valdez	12:00	***************************************	108	7.12	0.789
CIEW		y Lee	14:00		108	7.54	0.987
-		Pollard	16:00		108	7.32	0.785
		McGruder	18:00		108	7.43	0.975
	Ludici	· ioorader	20:00		108	7.5	1.189
			22:00		108	7.25	1.115
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	6,400	6,000	NO
_			Sodium Hydroxide	0	5,800	5,550	No
Visitors:	Bo J	ackson					
Visitors:							
Visitors:							
Vere there any abnor lo	mal operatio	onal issues onsite	? white the				
re there any addition	nal supplies	equipment neede	d? If so, what items and v	vhen?			
lave there been any	changes to t	he current sched	ule, including volumes ne	eded by clien	19		
las client provided a	ny operation	al feedback (posi	itive or negative)?				
			Company:			XTO	
Person:							
Person:							

Date:	9/9	9/2012		Report	Number:	g	91
- identification of the second				CONTRACTOR OF THE PARTY OF THE	lumber:		8
Client:)	KTO		S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	ish 29		S	nift Offsite Time:	18:00	am/pm
Site Contact:	Во	Jackson				12 hrs	Total hrs
Site Contact:	Samı	my Dean		Present	Onsite Activities:	Processi	ng Water
Processing Hrs T	odav:	3 hrs	Cumulativ	e Processing	Hrs	399	hrs
BBLS Processed		1,230 bbls		BBLS Proces			6 bbls
BBLS/Hr Proces		512.5		BBLS/Hr Proc	21.13.20.20.20.40.00.00.00.00.00.00.00.00.00.00.00.00		bbl/hr
557 (177 / Z. 10 (10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				125			
Lead Supervisor:		ny Dean	Readings:	flow back	Volts/Amps	pН	Turbidit
Lead Operator		eth Erler	10:00		108	7.56	0.895
Crew		McGruder	12:00		108	6.89	0.437
<u> </u>		y Lee	13:00		108	7.32	0.875
-	Adam	Pollard	16:00		N/A	N/A	N/A
 			18:00		N/A	N/A	N/A
<u>-</u>			20:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	6,000	5,950	NO
			Sodium Hydroxide	0	5,550	5,400	No
Visitors:	Bo J	ackson					
Visitors:							
Visitors:							
			• · · · · · · · · · · · · · · · · · · ·		SAS TO CONTRACTOR		
ere there any abnorr	nai operatio	onal issues onsite	Kuriidagara ya saa				
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0							
	al supplies	Pegulipment neede	17 If so, what items and w	vhen?			
e there any addition	al supplies	equipment neede	d? If so, what items and w	vhen?			
	al supplies	equipment neede	d? If so, what items and w	vhen?			
re there any addition	al supplies/	equipment neede	d? If so, what items and v	vhen?			393
re there any addition			d? If so, what items and w		2		
e there any addition					2 200		
e there any addition							
e there any addition	hanges to t	he current schedu	ile, including volumes ne		**************************************	**************************************	
e there any addition ave there been any c	hanges to t	he current schedu	ile, including volumes ne		7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	39	10.00
ave there been any constitution are there been any constitutions are client provided an Person:	hanges to t	he current schedu	ile, including volumes ne		7	XTO	
re there any addition ave there been any c	hanges to t	he current schedu	ile, including volumes ne		? ************************************	хто	

Date:	9/10	0/2012		Report	Number:	9	2
					umber:		3
Client:	>	TO		SI	nift Onsite Time:	6:00:00AM	am/pm
Location:	Na	sh 49		Sł	nift Offsite Time:	18:00	am/pm
Site Contact:	Bo J	ackson		A STATE OF THE STA		12 hrs	Total hrs
Site Contact:	Samr	ny Dean		Present (Onsite Activities:	Processi	ng Water
Processing Hrs T	odav:	4 hrs	Cumulativ	e Processing	Hrs:	403	hrs
BBLS Processed		2,277 bbls		BBLS Proces		182,89	3 bbls
BBLS/Hr Proces		512.5	Cumulative I	BBLS/Hr Proce	essed:	453.8	bbl/hr
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		eth Erler	10:00	HOW DOCK	110	7	0.198
Crew		McGruder	12:00		110	7.43	0.089
		y Lee	13:00		N/A	N/A	N/A
		Pollard	16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,950	5,800	NO
			Sodium Hydroxide	0	5,400	5,250	No
Visitors:	Bo J	ackson					
Visitors:			4				
Visitors:						1	
vere there any abnormals ire there any addition VC SCH 80			? d? If so, what items and v	when?			
laire thank bear and	hanges to	he current schedu	ule, including volumes ne	eded by client	2 0. c.	A A A A A A A A A A A A A A A A A A A	
las client provided ar	ny operation	nal feedback (posi		22.20-049		ZZZKOW ZALW	
las client provided ar	ny operation	nal feedback (posi	tive or negative)? Company:			хто	

Client: XTO Location: Nash 49 Site Contact: Bo Jackson Site Contact: Sammy Dean Processing Hrs Today: 1 hrs BBLS Processed: 512.5 Ead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder Crew Eddie McGruder Crew Eddie McGruder Chemical Usage HcL Acid 0 Sodium Hydroxide Visitors: Visitors: Visitors: Visitors: Te there any additional supplies/equipment needed? If so, what items and when?	Number: umber: ift Onsite Time: ift Offsite Time:		93
Site Contact: Bo Jackson Site Contact: Sammy Dean Present Community Processing Hrs Today: 1 hrs BBLS Processed Today: 935 bbls BBLS/Hr Processed: 512.5 Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder Crew Eddie McGruder Crew Eddie McGruder Crew Eddie McGruder Tising Today: 1 hrs Cumulative Processing Hrs Today: 10:00 Readings: flow back 10:00 1			8
She Contact: Bo Jackson Present O		6:00:00AM	am/pm
Processing Hrs Today: 1 hrs BBLS Processed Today: 935 bbls BBLS/Hr Processed: 512.5 Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder Tisino 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors: Visitors and when?	HE CHOICE I HITCH	1:00 PM	am/pm
Processing Hrs Today: 1 hrs BBLS Processed Today: 935 bbls BBLS/Hr Processed: 512.5 Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder Crew Eddie McGruder 12:00 13:00 16:00 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visitors: Visitors: Visitors:	146	5 hrs	Total hrs.
BBLS Processed Today: 935 bbls BBLS/Hr Processed: 512.5 Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder 12:00 13:00 16:00 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Bo Jackson Visitors: Visitors: Visitors: Visitors: Visitors:	nsite Activities:	Process	ing Water
BBLS Processed Today: 935 bbls BBLS/Hr Processed: 512.5 Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder 12:00 16:00 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Bo Jackson Visitors: Visitors: Visitors: Vis	irs:	404	hrs
Lead Supervisor: Sammy Dean Lead Operator Ray Lee Crew Eddie McGruder Crew Eddie McGruder 12:00 13:00 16:00 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Bo Jackson Visitors: Visitors: Visitors: Visitors:			28 bbls
Lead Operator Ray Lee 10:00 12:00 13:00 16:00 18:00 20:00	The state of the s		bbl/hr
Lead Operator Ray Lee 10:00 12:00 13:00 13:00 16:00 18:00 20:00 20:00 18:00 20	Volts/Amps	рН	Turbidity
Crew Eddie McGruder 12:00 13:00 16:00 18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visito	110	7	0.198
13:00 16:00 18:00 20:00	N/A	N/A	N/A
18:00 20:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visitors: Visitors: Visitors:	N/A	N/A	N/A
Z0:00 Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visitors: Visitors: Visitors: Visitors: Cere there any abnormal operational issues onsite? Control of the	N/A	N/A	N/A
Chemical Usage HcL Acid 0 Sodium Hydroxide 0 Visitors: Visitors: Visitors: Visitors: Vere there any abnormal operational issues onsite? Ore there any additional supplies/equipment needed? If so, what items and when? VC SCH 80	N/A	N/A	N/A
Visitors: Bo Jackson Visitors: Visitors: Visitors: Visitors: Vere there any abnormal operational issues onsite? Ore there any additional supplies/equipment needed? If so, what items and when? VC SCH 80	N/A	N/A	N/A
Visitors: Bo Jackson Visitors: Visitors: Visitors: Visitors: Vere there any abnormal operational issues onsite? Ore there any additional supplies/equipment needed? If so, what items and when? VC SCH 80	Start Inv.	End Inv.	On Order
Visitors: Bo Jackson Visitors: Visitors: Visitors: Viere there any abnormal operational issues onsite? o re there any additional supplies/equipment needed? If so, what items and when? VC SCH 80	5,800	5,750	NO
Visitors: Bo Jackson Visitors: Visitors: Visitors: Viere there any abnormal operational issues onsite? o re there any additional supplies/equipment needed? If so, what items and when? VC SCH 80	5,250	5,200	No
Visitors: ere there any abnormal operational issues onsite? re there any additional supplies/equipment needed? If so, what items and when? /C SCH 80			
re there any abnormal operational issues onsite? The there any additional supplies/equipment needed? If so, what items and when? The SCH 80			
re there any additional supplies/equipment needed? If so, what items and when? VC SCH 80			
o			
las client provided any operational feedback (positive or negative)?			
Person: Company:		XTO	
Additional Comments			

Date:	9/12/2012	1	Report	Number:	94	
	3/12/2012			lumber:		8
	×10			hift Casita Time	6.00.00444	/nm
Client:	XTO Nash 49	 		hift Onsite Time: hift Offsite Time:	6:00:00AM 18:00:00 PM	am/pm am/pm
Location: Site Contact:	Bo Jackson			mit Offsite fille.	12 hrs	Total hrs
Site Contact:	Sammy Dean		Present	Onsite Activities:		ing Water
Processing Hrs T	oday: 6 h		e Processing		410	hrs
BBLS Processed T	oday: 2,513 b		BBLS Proces		186,34	11 bbls
BBLS/Hr Process	sed: 512.5	Cumulative I	BLS/Hr Proc	essed:	454.5	bbl/hr
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Ray Lee	10:00		110	7	0.198
Crew	Eddie McGruder	12:00		110	7.65	0.285
		14:00		110	7.24	1.893
		16:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
-		20:00		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	00	5,750	5,500	NO
		Sodium Hydroxide	0	5,200	5,000	No
Visitors:	Bo Jackson					
Visitors:						
Visitors:						
ere there any abnor	nal operational issues	nsite?				
e there any addition	al supplies/equipmen	eeded? If so, what items and v	vhen?			
VC SCH 80				Min. 2		
	hanges to the current	chedule, including volumes ne	eded by client	?		
0						
as client provided an	v operational feedbac	(positive or negative)?	Miles adecision A A Const		The State of the S	
Person:	,,	Company:			хто	200
				4		

Date:	9/13	3/2012	Į.	Report	Number:	9	5
		,			umber:		3
Client:		то	F	SI SI	nift Onsite Time:	6:00:00AM	am/pm
Location:		sh 49	<u> </u>	111111111111111111111111111111111111111	ift Offsite Time:	18:00:00 PM	am/pm
Site Contact:		ackson		JI.	int Onsite rime.	12 hrs	Total hrs
Site Contact:		ny Dean		Present (Onsite Activities:		ng Water
	2000 Kanasa	6 - 1		e Processing	Jean.	416	hrs
Processing Hrs T		6 hrs 2,206 bbls		BBLS Proces			7 bbls
BBLS/Hr Proces		512.5		BLS/Hr Proce			bbl/hr
BBL5/Hr Proces	sea.	512.5	Cumulauve	DECITI FICE	isseu.	400.2	DDD
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		y Lee	10:00		110	6.89	1.785
Crew		McGruder	12:00		110	7.24	0.896
	2-310		14:00		110	7.13	0.987
<u> </u>			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
_			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,750	5,500	NO
<u></u>			Sodium Hydroxide	0	5,200	5,000	No
Visitors:	Bo J	ackson					
Visitors:							
Visitors:							
Vere there any abnor No	mal operation	onal issues onsite			And the state of t		
are there any addition	nal supplies	/equipment neede	ed? If so, what items and v	vhen?			Z : 41
Have there been any o No	changes to	the current sched	ule, including volumes ne	eded by client	9		
las client provided a	ny operatio	nal feedback (pos	itive or negative)?		ı	XTO	
			Company.		1	710	
Person:							

Date:	9/1	4/2012	ſ	Report	Number:	9	6
Date:1	3/1	4/2012	į		lumber:		3
Client:)	KTO		S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	ish 49		Shift Offsite Time:		18:00:00 PM	am/pm
Site Contact:	Во	jackson				12 hrs	Total hr
Site Contact:	Samr	my Dean	l	Present	Onsite Activities:	Processi	ng Water
Processing Hrs T	odav:	6 hrs	Cumulativ	e Processing	Hrs:	416	hrs
BBLS Processed 1		2,206 bbls		BBLS Proces		188,54	7 bbls
BBLS/Hr Proces		512.5	Cumulative I	BBLS/Hr Proc	essed:	453.2	bbl/hr
Lead Supervisor:	Sami	my Dean	Readings:	flow back	Volts/Amps	pH	Turbidit
Lead Operator		n Pollard	10:00	HOW DUCK	110	6.89	1.785
Crew		ay Lee	12:00		110	7.24	0.896
CICW	7.00	., 200	14:00		110	7.13	0.987
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
<u> </u>			HcL Acid	0	5,750	5,500	NO
<u> </u>			Sodium Hydroxide	0	5,200	5,000	No
Visitors:	Во	Jackson					
Visitors:							
Visitors:							
re there any abnormalization			?? id? If so, what items and v	vhen?			
	hanges to	the current sched	ule, including volumes ne	eded by clien	?		
ave there been any coo	ny operatio	nal f ee dback (pos	itive or negative)?			ХТО	

Date:	9/15/2012		Report	Number:		97
	-,,			Number:		8
Client:	хто	[Service S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Nash 49			hift Offsite Time:	18:00:00 PM	am/pm
Site Contact:	Bo Jackson				12 hrs	Total hrs
Site Contact:	Sammy Dean		Present	Onsite Activities:	Main	enance
Processing Hrs T	oday: 0 hrs	Cumulativ	e Processing	Hrs:	416	hrs
BBLS Processed T			BBLS Proce		188,5	47 bbls
BBLS/Hr Process	sed: 512.5	Cumulative I	BLS/Hr Proc	essed:	453.2	bbl/hr
Lead Supervisor:	Sammy Dean	Readings;	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Adam Pollard	10:00		N/A	N/A	N/A
Crew	Ray Lee	12:00		N/A	N/A	N/A
		14:00		N/A	N/A	N/A
		16:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
		20:00		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	00	5,500	5,500	NO
		Sodium Hydroxide	0	5,000	5,000	No
Visitors:	Bo Jackson					
Visitors:						
Visitors				1		
Vere there any abnorm No	nal operational issues onsite	?				
Are there any additiona	al supplies/equipment neede	ed? If so, what items and w	/hen?	Reco		A Secretary Constitution of the Constitution o
lave there been any c	hanges to the current sched	ule, including volumes ne	eded by clien			
No					XX	
	y operational feedback (pos	itive or negative)?				
las client provided an					хто	
las client provided an Person:		Сотрапу:		1		

Date:	9/1	6/2012	Ι Γ	Report	Number:		98
	-7/1	0,72022			lumber:		8
			_				
Client:	,	кто		S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	ish 49		S	hift Offsite Time:	18:00:00 PM	am/pm
Site Contact:	Во	lackson				12 hrs	Total hr
Site Contact:	Samı	my Dean	L	Present	Onsite Activities:	Maint	enance
Processing Hrs T	oday:	0 hrs	Cumulativ	Processing	Hre:	416	hrs
BBLS Processed T		0 bbls		BBLS Proces			17 bbls
BBLS/Hr Process	William Company	512.5		BLS/Hr Proc			bbl/hr
Lead Supervisor:	Samı	my Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Adan	n Pollard	10:00		N/A	N/A	N/A
Crew	Ra	ıy Lee	12:00		N/A	N/A	N/A
			14:00		N/A	N/A	N/A
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,500	5,500	NO
			Sodium Hydroxide	0	5,000	5,000	No
Visitors:	Во	lackson					
Visitors:							
Visitors:							
ara there am ahra-	nal operation	onal issues onsite	e?				
re there any additions	al supplies	/equipment neede	ed? If so, what items and w	hen?			
re there any additiona VC SCH 80			ed? If so, what items and w		?		
re there any additiona VC SCH 80 ave there been any c	hanges to I	the current sched	ule, including volumes nee				
re there any additional AC SCH 80 ave there been any close the second and se	hanges to f	the current sched	ule, including volumes need it is or negative)?	eded by client		XTO	
re there any additional AC SCH 80 ave there been any close the second and se	hanges to f	the current sched	ule, including volumes nee	eded by client	2.20	XTO	

Date:	9/17/2	2012		Report	Number:	9	9
			•	Unit 1	lumber:		8
Client:	XT	0		S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Nash	49			hift Offsite Time:	18:00:00 PM	am/pm
Site Contact:	Bo Jac	kson				12 hrs	Total hrs
Site Contact:	Sammy	Dean		Present	Onsite Activities:	Mainte	enance
Processing Hrs T	oday:	0 hrs	Cumulativ	re Processing	Hrs:	416	hrs
BBLS Processed 1		0 bbls	the control of the co	BBLS Proces		188,54	7 bbls
BBLS/Hr Proces	sed:	512.5	Cumulative	BBLS/Hr Proc	essed:	453.2	bbl/hr
Lead Supervisor:	Sammy	Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Eddie Mo	Gruder	10:00		N/A	N/A	N/A
Crew	Ray	_ee	12:00		N/A	N/A	N/A
			14:00		N/A	N/A	N/A
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
-			20:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	5,500	5,500	NO
			Sodium Hydroxide	0	5,000	5,000	No
Visitors:	Bo Jac	kson					
Visitors:							
/ere there any abnorr o	nal operation	al issues onsit	e?				
re there any addition. VC SCH 80	al supplies/ed	uipment need	ed? If so, what items and v	when?			
ave there been any c	hanges to the	current sched	lule, including volumes ne	eded by client	?		
0							
	y operational	feedback (pos	itive or negative)?				
0	y operational	feedback (pos	itive or negative)? Company:	60		XTO	
as client provided an				don Tank.		хто	

Date:	0/19	8/2012		Dancet	Number:	11	00	
Date.	9/10	5/2012			lumber:		3	
			!					
Client:	· · · · · · · · · · · · · · · · · · ·	кто		S	hift Onsite Time:	6:00:00AM	am/pm	
Location:	Na	sh 49		SI	nift Offsite Time:	18:00:00 PM	am/pm	
Site Contact:	Bo J	lackson	12 hrs Tota					
Site Contact:	Samr	ny Dean		Present	Onsite Activities:	Mainte	enance	
Processing Hrs 1	oday:	8 hrs	Cumulativ	e Processing	Hrs:	424	hrs	
BBLS Processed		3.005 bbls		BBLS Proces			2 bbls	
BBLS/Hr Proces		512.5		BBLS/Hr Proc	**************************************		bbl/hr	
Lead Supervisor:		ny Dean	Readings:	flow back	Volts/Amps	pH	Turbidi	
Lead Operator		McGruder	10:00		110	6.89	0.785	
Crew	Ra	ly Lee	12:00		110	7.54	0.983	
_			14:00		110	7.85	1.891	
-			16:00		110	7.36	0.985	
<u> </u>			18:00		N/A	N/A	N/A	
			20:00		N/A	N/A	N/A	
	1.00.000		Chemical	Usage	Start Inv.	End Inv.	On Ord	
			HcL Acid	0	5,500	5,200	NO	
			Sodium Hydroxide	0	5,000	4,750	No	
Visitors:	Bo J	lackson						
Visitors:	Select	Services						
Visitors:								
						,		
J								
/ere there any abnor o	mar operation	mar issues offisie	• Data Managara		<u> </u>			
so those one oddition	al amadaa	lamilamant naada	d2 If no what Hamp and	uban2	raturat zer er sam	501. · · · · · · · · · · · · · · · · · · ·		
re mere any anomor	iai supplies	equipment neede	ed? If so, what items and t	whenr		2-14-14-14-14-14-14-14-14-14-14-14-14-14-		
VC SCH 80	hanges to t	he current sched	ule, including volumes ne	eded by client	?			
VC SCH 80	changes to t	the current sched	ule, including volumes ne	eded by client	?			
VC SCH 80	changes to t	the current sched	ule, including volumes ne	eded by client				
VC SCH 80 lave there been any o				eded by client	?	A Shirt		
ave there been any o			itive or negative)?	eded by client	? The state of the	XTO		
VC SCH 80 ave there been any o				reded by client	?	TO XTO		

Date:	9/10	9/2012	· ·	Report	Number:	1:	01
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	į		lumber:		8
Client:	Х	(TO		. S	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	sh 49		S	hift Offsite Time:		am/pm
Site Contact:	Bo J	ackson				8 hrs	Total hr
Site Contact:	Samn	ny Dean	Ĺ	Present	Onsite Activities:	Mainte	enance
Processing Hrs	oday:	3 hrs	Cumulativ	e Processing	Hrs:	427	hrs
BBLS Processed		1,366 bbls		BBLS Proce		192,91	8 bbls
BBLS/Hr Proces		512.5	Cumulative E	BLS/Hr Proc	essed:	451.8	bbl/hr
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		McGruder	10:00	now back	110	6.89	0.785
Crew		y Lee	12:00		110	7.54	0.983
		,	14:00		110	7.85	1.891
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
<u> </u>			Chemical	Usage	Start Inv.	End Inv.	On Ord
-			HcL Acid	0	5,200	5,100	NO
			Sodium Hydroxide	0	4,750	4,700	No
Visitors:	Bo J	lackson					
Visitors:	Select	Services					
Visitors:	Во	Wells					
Vere there any abnor	mal operatio	onal issues onsite	2 (100)	n todestra			
0	mai oporati	and noons one in	<u>*************************************</u>	<u> </u>		<u> </u>	
						to a state of the	
	al supplies	equipment neede	d? If so, what items and w	vhen?			
	nal supplies	/equipment neede	d? If so, what items and w	vhen?			
Are there any addition	nal supplies	/equipment neede	d? If so, what items and v	vhen?			
PVC SCH 80						Panga	
VC SCH 80			d? If so, what items and v			Total	
PVC SCH 80						His.	
VC SCH 80					· · · · · · · · · · · · · · · · · · ·		
VC SCH 80	changes to t	the current schedu	ule, including volumes ne				
VC SCH 80 lave there been any	changes to t	the current schedu	ule, including volumes ne			XTO	
Iave there been any	changes to t	the current schedu	ule, including volumes ne (itive or negative)?			XTO	

A CONTRACTOR OF A CONTRACTOR O						
Date:	9/20/2012		Report I	Number:		02 B
		L	Onicia	umber.		
Client:	XTO	7 [Sh	ift Onsite Time:	6:00:00AM	am/pm
Location:	Nash 49	1	Sh	ift Offsite Time:	20:00:00 PM	am/pm
Site Contact:	Bo Jackson				14 hrs	Total hrs
Site Contact:	Sammy Dean		Present C	Insite Activities	Mainte	enance
December Use 7	Today: 8 hrs	Cumulativ	Processing F	lre.	435	hrs
Processing Hrs 1 BBLS Processed			BBLS Proces			94 bbls
BBLS/Hr Proces			BLS/Hr Proce			bbl/hr
DDL3/III F10CE	186a. 312.3		ADECATA TOCC	<u> </u>		
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator	Eddie McGruder	10:00	7	110	7.78	1.90
Crew	Ray Lee	12:00		110	7.13	.483
	, , , , , , , , , , , , , , , , , , ,	14:00		110	7.09	.319
<u> </u>		16:00		110	7	0.209
-		18:00		N/A	N/A	N/A
<u> </u>		20:00		N/A	N/A	N/A
<u> </u>						
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	5,100	4,800	NO
		Sodium Hydroxide	0	4,700	4,400	No
Visitors:	Bo Jackson					
Visitors:	Select Services					
Visitors:	Bo Wells					
Vere there any abnor No	mal operational issues ons	site?				A Blancast
	nal supplies/equipment nee	orled? If so what items and v	vhen?			862.2011
ro there any addition		dear ii oo, ande teme and i				
Are there any addition PVC SCH 80 Have there been any		edule, including volumes ne	eded by client			
PVC SCH 80		edule, including volumes ne	eded by client			
VC SCH 80		edule, including volumes ne	eded by client	7		
VC SCH 80		edule, including volumes ne	eded by client	3	A Section	
Iave there been any			eded by client	2		
Ave there been any	changes to the current sch		eded by client	7	XTO	
lave there been any	changes to the current sch	ositive or negative)?	eded by client			

Date:	9/21	/2012	Γ	Report	Number:	10	03
	-,				umber:		8
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			r				
Client:		TO			ift Onsite Time:	6:00:00AM	am/pn
Location:		sh 49		Sh	ift Offsite Time:	20:00:00 PM	am/pn
Site Contact:		ackson				14 hrs	Total h
Site Contact:	Samn	ny Dean	L	Present (	Onsite Activities:	Mainte	enance
Processing Hrs	Foday:	2 hrs	Cumulativ	e Processing I	trs:	437	hrs
BBLS Processed	- Contraction of the Contraction	1,967 bbls	Cumulative	<b>BBLS Proces</b>	BLS Processed: 199,361		
BBLS/Hr Proces		512.5	Cumulative E	BLS/Hr Proce	ssed:	456.2	bbl/hr
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidi
Lead Operator		McGruder	10:00		110	7.2	1.15
Crew		y Lee	12:00		N/A	N/A	N/A
		oher Perry	14:00		N/A	N/A	N/A
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
<u> </u>			Chemical	Usage	Start Inv.	End Inv.	On Ord
			Hal Acid	0	4,800	4,750	NO
	,		Sodium Hydroxide	0	4,400	4,350	No
Visitors:	Bo J	ackson					
Visitors:	Select	Services					
Visitors:	Во	Wells					
VC SCH 80	nal supplies/	equipment needs	ed? If so, what items and w		STERROLL AND THE STERRO		
0	ny anaration	nal feedback (pos	itive or negative)?			7/2000	
as client provided a	ny operation	Maria.	Company:	dish dipart garag		XIU	
as client provided a Person:	ny operation		Company:			XTO	

Date:	9/22,	/2012		Report	Number:	1	04		
					Number:		8		
Client:	X	го			hift Onsite Time:	6:00:00AM	am/pm		
Location:		h 49			hift Offsite Time:	12:00 PM	am/pm		
Site Contact:	Bo Ja	ckson			Na. 12 State of the state of th	14 hrs	Total hrs		
Site Contact:	Samm	y Dean		Present	Onsite Activities:	Maint	enance		
Processing Hrs T	odav:	4 hrs	Cumulativ	e Processing	Hrs:	441	hrs		
BBLS Processed		2,982 bbls	1 m 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	BBLS Proces	NAME OF TAXABLE PARTY O		13 bbls		
BBLS/Hr Proces	sed:	512.5	Cumulative	Cumulative BBLS/Hr Processed: 458.8 bb					
Lead Supervisor:	Samm	y Dean	Readings:	flow back	Volts/Amps	pН	Turbidity		
Lead Operator		lcGruder	10:00		110	6.84	1.67		
Crew		Lee	12:00		110	7.35	1.02		
	Christop	her Perry	14:00		N/A	N/A	N/A		
			16:00		N/A	N/A	N/A		
<u></u>			18:00		N/A	N/A	N/A		
			20:00		N/A	N/A	N/A		
			Chemical	Usage	Start Inv.	End Inv.	On Order		
			HcL Acid	0	4,750	4,600	NO		
			Sodium Hydroxide	0	4,350	4,200	No		
Visitors:	·····	ckson							
Visitors:		Services							
Visitors:	ВОУ	Vells				1			
ere there any abnor			3			W 100 8 8 8 8 8 8			
o	nai operation	iai issues onsite				2/48/5-22 ·			
						***************************************			
	al supplies/e	quipment neede	ed? If so, what items and w	vhen?	DAYARUT .				
VC SCH 80									
			COOK PURE TO THE P	03000.					
o	nanges to th	e current sched	ule, including volumes ne	eded by client	7	VI WAYARI	The Action		
as client provided an	y operationa	I feedback (pos	itive or negative)?						
			Company:			XTO			
Person:									

**RT Hicks Consultants** 

Date:	9/23/2012		Report	Number:	1	05
		ĺ		lumber:		8
Client:	XTO	] [	SI	hift Onsite Time:	6:00:00AM	am/pm
Location:	Nash 49		Sh	nift Offsite Time:	12:00 PM	am/pm
Site Contact:	Bo Jackson				14 hrs	Total hr
Site Contact:	Sammy Dean		Present (	Onsite Activities:	Maint	enance
Processing Hrs T	oday: 2 hrs	Cumulativ	e Processing	Hrs:	443	hrs
BBLS Processed 1	oday: 1,441 bbls	Cumulative	<b>BBLS Proces</b>	sed:	203,78	34 bbls
BBLS/Hr Process	sed: 512.5	Cumulative I	BLS/Hr Proce	essed:	460.0	bbl/hr
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	pН	Turbidit
Lead Operator	Eddie McGruder	10:00		110	6.79	1.91
Crew	Ray Lee	12:00		N/A	N/A	N/A
	Christopher Perry	14:00		N/A	N/A	N/A
		16:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
-		20:00		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	4,600	4,500	NO
		Sodium Hydroxide	0	4,200	4,100	No
Visitors:	Bo Jackson					
Visitors:	Select Services					
Visitors:	Bo Wells					
ere there any abnorr	nal operational issues onsit	e?				
			2			
VC SCH 80	al supplies/equipment need	ed? If so, what items and w	/hen?	*		
ave there been any c ○	hanges to the current sched	tule, including volumes ne	eded by client	?		
)						
as client provided an	y operational feedback (pos	sitive or negative)?			22000	
Person:		Company:			OTX	

Date:	9/2	4/2012		Renort	Number:	1	06
	3/2	1,72012		televeranteet-televis-t-t-t-t-t-t-t-t-t-t-t-t-t-t-t-t-t-t-t	lumber:		8
			'				
Client:	>	KTO		Section Sectio	hift Onsite Time:	6:00:00AM	am/pm
Location:	Na	sh 49		SI	nift Offsite Time:	12:00 PM	am/pm
Site Contact:	Во	ackson			STATE OF THE STATE	14 hrs	Total hrs.
Site Contact:	Samı	ny Dean		Present	Onsite Activities:	Process Water	er/Maintenance
Processing Hrs T	oday:	2 hrs	Cumulativ	e Processing	Hrs:	445	hrs
BBLS Processed 1	Today:	1,156 bbls	Cumulative	BBLS Proces	sed:	204,94	10 bbls
BBLS/Hr Proces	sed:	512.5	Cumulative	BBLS/Hr Proc	essed:	460.5	bbl/hr
Lead Supervisor:	Samı	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator		McGruder	10:00		110	7.54	0.897
Crew		y Lee	12:00		N/A	N/A	N/A
		pher Perry	14:00		N/A	N/A	N/A
		ald White	16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
<u> </u>			Chemical	Usage	Start Inv.	End Inv.	On Order
			HcL Acid	0	4,500	4,450	NO
L			Sodium Hydroxide	0	4,100	4,050	No
Visitors:	Во	ackson	Sociali Hydroxide	0	4,100	4,030	110
Visitors:	~~~~~~~	Services					
Visitors:	Во	Wells					
<b>Nere there any abnorr</b> No	nal operation	onal issues onsite	Research		ANTH-School Services		
Are there any addition	al supplies	equipment neede	ed? If so, what items and v	vhen?			
	hanges to t	he current sched	ule, including volumes ne	eded by client	<b>?</b>		2/
No							
		al feedback (pos	itive or negative)?				7888
las client provided an	y operation					VTO	
las client provided an	y operation	, , , , , , , , , , , , , , , , , , ,	Company:			XTO	
	y operation		Company:	PARTICIPATE OF THE PARTICIPATE O	***************************************	X10	

Date:	9/21	5/2012	Γ	Report	Number:	1:	07
	3/2	,, 2012			umber:		8
			-				
Client:	>	(TO	ļ		nift Onsite Time:	6:00:00AM	am/pm
Location:		sh 49		Sh	ift Offsite Time:	12:00 PM	am/pm
Site Contact:		ackson				6 hrs	Total hrs
Site Contact:	Samr	ny Dean	L	Present (	Onsite Activities:	Mainte	enance
Processing Hrs T	odav:	0 hrs	Cumulativ	e Processing I	Hrs:	445	hrs
BBLS Processed		0 bbls	Cumulative	BBLS Proces	sed:	204,94	10 bbls
BBLS/Hr Proces		512.5	Cumulative E	BBLS/Hr Proce	essed:	460.5	bbl/hr
Lead Supervisor:	Samr	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		McGruder	10:00		N/A	N/A	N/A
Crew	Ra	y Lee	12:00		N/A	N/A	N/A
	Christo	pher Perry	14:00		N/A	N/A	N/A
	Regin	ald White	16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
<u> </u>			HcL Acid	0	4,450	4,450	NO
····			Sodium Hydroxide	0	4,050	4,050	No
Visitors:	Во	Jackson					
Visitors:	Select	t Services		<u> </u>			
Visitors:	Во	Wells					
lere there any abnor	mal operati	onal issues onsit	e?	140000411117			
0							
re there any addition	al supplies	/equipment need	ed? If so, what items and v	vhen?			
re there any addition	al supplies	/equipment need	ed? If so, what items and v	when?			
	ial supplies	/equipment need	ed? If so, what items and v	when?			
VC SCH 80							
VC SCH 80			ed? If so, what items and v		4		
VC SCH 80							
VC SCH 80					7 704		
VC SCH 80 lave there been any o	changes to	the current sched	dule, including volumes ne				Na.
VC SCH 80  ave there been any o	changes to	the current sched	dule, including volumes ne sitive or negative)?			VIO	
VC SCH 80  ave there been any o	changes to	the current sched	dule, including volumes ne			XTO	State of State

Date:	9/2	6/2012		Report	Number:	10	08
				Comment of the Commen	lumber:		3
Client:		XTO			hift Onsite Time:	6:00:00AM	am/pm
Location:		ash 49		SI	nift Offsite Time:	12:00 PM	am/pm
Site Contact:		Jackson		2.000	Table Page	6 hrs	Total hr
Site Contact:	Sam	my Dean		Present (	Onsite Activities:	Process Wate	r/Maintena
Processing Hrs	Today:	4 hrs	Cumulativ	e Processing	Hrs:	449	hrs
BBLS Processed		2,970 bbls		BBLS Proces		207,910 bbls	
BBLS/Hr Proces	The state of the s	512.5	Cumulative BBLS/Hr Processed: 463.1				
			V1200				
Lead Supervisor:		my Dean	Readings:	flow back	Volts/Amps	pH	Turbidit
Lead Operator		McGruder	10:00		110	7.10	3.31
Crew		ay Lee	12:00		110	7.65	1.96
		opher Perry	14:00		N/A	N/A	N/A
Re	Regir	ald White	16:00		N/A	N/A	N/A
-			18:00		N/A	N/A	N/A
-	1-801-0		20:00		N/A	N/A	N/A
			Chemical	Usage	Start inv.	End Inv.	On Orde
			HcL Acid	0	4,450	4,200	NO
			Sodium Hydroxide	0	4,050	3,800	No
Visitors:	Во	Jackson					
Visitors:	Selec	t Services					
Visitors:	Во	Wells					
			? d? If so, what items and v	vhen?			
/C SCH 80						7 (A)	STREET TREETER
ave there been any o			tle, including volumes ne	eded by client			
ave there been any of the second seco				eded by client		хто	

Date:	9/27	2/2012		Report	Number:	11	09
		,		<del></del>	lumber:		8
Client:		TO			hift Onsite Time:	6:00:00AM	am/pm
Location:		sh 49		SI	hift Offsite Time:	12:00 PM	am/pm
Site Contact:		ackson				6 hrs	Total hrs
Site Contact:	Samn	ny Dean		Present	Onsite Activities:	Process Water	er/Maintenar
Processing Hrs	Foday:	2 hrs	Cumulativ	e Processing	Hrs:	451	hrs
BBLS Processed		1,045 bbls	Cumulative	BBLS Proces	ssed:	208,95	5 bbls
BBLS/Hr Proces	sed:	512.5	Cumulative l	BBLS/Hr Proc	essed:	463.3	bbl/hr
Lead Supervisor:	Samn	ny Dean	Readings:	flow back	Volts/Amps	рН	Turbidit
Lead Operator		<b>McGruder</b>	10:00		110	7.54	1.19
Crew		y Lee	12:00		N/A	N/A	N/A
		oher Perry	14:00		N/A	N/A	N/A
		ald White	16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	4,200	4,100	NO
			Sodium Hydroxide	0	3,800	3,700	No
Visitors:		ackson					
Visitors:		Services					····
Visitors:	Во	Wells					
Vere there any abnor	mal operation	nal issues onsite					
re there any addition	nal supplies/	equipment n <del>ee</del> de	d? If so, what items and v	vhen?	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
VC SCH 80							
lave there been any	changes to t	he current schedi	ile, including volumes ne	eded by client	9		
o	onangeo to t	no contonicono.			- Control of the Cont	1 12 540000	2,728,602
as client provided a	ny operation	al feedback (posi	tive or negative)?			(220)	
Person:			Company:			XTO	
Additional Com							

Date:	9/28/2012		Report	Number:	1	10
<u> </u>	3/20/2012			lumber:		3
Client:	XTO		5	hift Onsite Time:	6:00:00AM	am/pm
Location:	Nash 49		S	hift Offsite Time:	12:00 PM	am/pm
Site Contact:	Bo Jackson				6 hrs	Total hrs
Site Contact:	Sammy Dean		Present	Onsite Activities:	Mainte	enance
Processing Hrs	Today: 0 hrs	Cumulativ	e Processing	Hrs:	451	hrs
BBLS Processed			BBLS Proce			5 bbls
BBLS/Hr Proces			BBLS/Hr Proc			bbl/hr
ODEONI NOCO	312.0					****
Lead Supervisor:	Sammy Dean	Readings:	flow back	Volts/Amps	рН	Turbidity
Lead Operator	Eddie McGruder	10:00	- Settleministra	N/A	N/A	N/A
Crew	Ray Lee	12:00		N/A	N/A	N/A
	Christopher Perry	14:00		N/A	N/A	N/A
	Reginald White	16:00		N/A	N/A	N/A
		18:00		N/A	N/A	N/A
		20:00		N/A	N/A	N/A
		Chemical	Usage	Start Inv.	End Inv.	On Orde
		HcL Acid	0	4,100	4,100	NO
<u> </u>		Sodium Hydroxide	0	3,700	3,700	No
Visitors:	Bo Jackson					
Visitors:	Select Services					
Visitors:	Bo Wells					
re there any addition		eeded? If so, what items and v				
lo	iny operational feedback				хто	90.00 J
las client provided a Person:			Contraction and the contraction of the	1		

	0/20	/2012	ı F	Report	Number:	1.	11
Date.	Date: 9/29/2012 Report Number: Unit Number:				3		
Client:	Х.	ГО	1	S	hift Onsite Time:	6:00:00AM	am/pm
Location:		h 49		SI	nift Offsite Time:	12:00 PM	am/pm
Site Contact:	Bo Ja	ickson				6 hrs	Total hrs.
Site Contact:	Samm	y Dean		Present (	Onsite Activities:	Mainte	enance
		0			U-s c	451	hrs
Processing Hrs		0 hrs 0 bbls		e Processing BBLS Proces			5 bbls
BBLS Processed  BBLS/Hr Proces		512.5		BLS/Hr Proc			bbl/hr
BBLS/HI Proces	seu.	512.5	Cumulative	JDLOMI TIOC	coocu,	400.0	001111
Lead Supervisor:	Samm	y Dean	Readings:	flow back	Volts/Amps	pН	Turbidity
Lead Operator		lcGruder	10:00		N/A	N/A	N/A
Crew	Ray	Lee	12:00		N/A	N/A	N/A
		her Perry	14:00		N/A	N/A	N/A
	Regina	ld White	16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00	<u></u>	N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
-			HcL Acid	0	4,100	4,100	NO
_	······································		Sodium Hydroxide	0	3,700	3,700	No
Visitors:	Bo Ja	ackson	1				
Visitors:	Select	Services					
Visitors:	Bo \	Wells					
Vere there any abnor	mal operatio	nal lesues onsi	62				
0							
	nal supplies/e	equipment need	led? If so, what items and v	vhen?			
	nal supplies/	equipment need	led? If so, what items and v	vhen?			
	nal supplies/	equipment need	led? If so, what items and v	vhen?			
PVC SCH 80							
VC SCH 80			led? If so, what items and v				
VC SCH 80  lave there been any					?		
Iave there been any	changes to th	ne current sche	dule, including volumes ne		7		
Iave there been any	changes to th	ne current sche	dule, including volumes ne sitive or negative)?			XTO	
VC SCH 80	changes to th	ne current sche	dule, including volumes ne		?	XTO	

Client: XTO Location: Nash 49 Site Contact: Bo Jackson Site Contact: Sammy Dean  Processing Hrs Today: 0 hrs BBLS Processed Today: 0 bbls BBLS/Hr Processed: 512.5  Lead Supervisor: Sammy Dean  Crew Ray Lee Christopher Perry Reginald White Reginald White 16:00 N/A	Date:	9/3	0/2012		Report Number:		112	
Shift Offsite Time:   12:00 PM   am/pm								
Site Contact: Bo Jackson Site Contact: Bo Jackson Site Contact: Bo Jackson Site Contact: Bo Jackson Site Contact: Sammy Dean Processing Hrs Today: 0 hrs BBLS Processed Today: 0 bbls BBLS/Hr Processed: 208,955 bbls Cumulative BBLS/Hr Processed: 208,955 bbls Cumulative BBLS/Hr Processed: 463.3 bbl/hr Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Action Processed: 10.00 N/A	Client		(TO ]	1		hift Oncite Time:	6:00:00AM	am/nm
Site Contact: Bo Jackson Site Gontact: Sammy Dean Processing Hrs Today: O hrs BBLS Processed Today: O bbls BBLS/Hr Processed: 512.5  Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Reginald White Reginald White Site Sources Select Services Visitors: Bo Jackson Visitors: Select Services Bo Wells  Visitors: Bo Jackson Visitors: Bo Wells  Were there any abnormal operational issues onsite?  No Campany: XTO  Company: XTO  Company: XTO  Company: XTO  Camulative Processing Hrs: 451 hrs Cumulative BBLS Processed: 209,955 bbls Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Maintenance  Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 209,955 bbls  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Maintenance  Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 209,955 bbls  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 209,955 bbls  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 209,955 bbls  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 209,955 bbls  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processing Hrs: 451 hrs  Cumulative BBLS Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processing Processed: 463.3 bbl/hr  Fresent Onsite Activities: Advision Processed: 463.3 bbl/hr  Fresent Onsi								
Processing Hrs Today: 0 hrs BBLS Processed Today: 0 bbls BBLS/Hr Processed: 512.5  Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Reginald White Reginald White Christopher Services Visitors: Bo Jackson Visitors: Select Services Visitors: Bo Wells  Were there any additional supplies/equipment needed? If so, what items and when?  Are there any additional supplies/equipment needed? If so, what items and when?  Are there been any changes to the current schedule, including volumes needed by client?  Present Onsite Activities: Maintenance  Cumulative BBLS/Hr Processed: 208,955 bbls Cumulative BBLS/Hr Processed: 208,955 bbls Cumulative BBLS/Hr Processed: 463.3 bbl/hr  Are there any self-or processed: 463.3 bbl/hr  In June BBLS/Hr Processed: 463.3 bbl/hr  Readings: flow back Volts/Amps pH Turbidity 10.00 N/A					•	inconsite rane.		
BBLS/Hr Processed: 0 bbls BBLS/Hr Processed: 512.5  Cumulative BBLS/Hr Processed: 208,955 bbls Cumulative BBLS/Hr Processed: 463.3 bbl/hr  Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Reginald White 10:00 N/A	filminary				Present	Onsite Activities:		
BBLS/Hr Processed: 0 bbls BBLS/Hr Processed: 512.5  Cumulative BBLS/Hr Processed: 463.3 bbl/hr  Lead Supervisor: Sammy Dean Lead Supervisor: Eddie McGruder Crew Ray Lee Christopher Perry Reginald White 10:00 N/A N/A N/A N/A N/A Reginald White 16:00 N/A	Drossoniae Uro T		O bec		Par so Para Salana	<b>0</b> 1	451	bes
BBLS/Hr Processed: 512.5  Cumulative BBLS/Hr Processed: 463.3 bbl/hr  Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Reginald White Reginald White Chemical Usage Start Inv. End Inv. On Order HcL Acid 0 4,100 N/A								
Lead Supervisor: Sammy Dean Lead Operator Eddie McGruder Crew Ray Lee Christopher Perry Reginald White  Chiristopher Perry Reginald White  Chemical Usage Start Inv. End Inv. On Order HcL Acid 0 4,100 4,100 NO Sodium Hydroxide 0 3,700 3,700 No Visitors: Bo Jackson Visitors: Bo Wells  Were there any abnormal operational issues onsite?  Were there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Lead Operator Eddie McGruder 10:00 N/A								
Lead Operator   Eddie McGruder   10:00   N/A   N/A   N/A   N/A   N/A   Crew   Ray Lee   12:00   N/A   N/A   N/A   N/A   N/A   Reginald White   16:00   N/A	DDL9/HI FIDC48	seu.	512.5	Cumulative	BBLS/HI PIOC	esseu.	463.3	DOMIL
Lead Operator	Lead Supervisor	Sami	ny Dean	Readings	flow back	Volts/Amps	ы	Turbidity
Crew Ray Lee Christopher Perry Reginald White  16:00 N/A					HOW DOCK			
Christopher Perry Reginald White  16:00 N/A	···			·····	·····			
Reginald White  16:00  N/A  18:00  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N								
18:00 N/A N/A N/A N/A 20:00 N/A								
20:00 N/A N/A N/A N/A  Chemical Usage Start Inv. End Inv. On Order  HcL Acid 0 4,100 4,100 NO  Sodium Hydroxide 0 3,700 3,700 No  Visitors: Select Services Visitors: Bo Wells  Were there any abnormal operational issues onsite?  No  Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person: Company: XTO		3						
Chemical Usage Start Inv. End Inv. On Order HcL Acid 0 4,100 4,100 NO Sodium Hydroxide 0 3,700 3,700 No Visitors: Select Services Visitors: Bo Wells  Were there any abnormal operational issues onsite? No  Are there any additional supplies/equipment needed? If so, what items and when? PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client? No Has client provided any operational feedback (positive or negative)? Person: Company: XTO								
HcL Acid 0 4,100 4,100 NO Sodium Hydroxide 0 3,700 3,700 No Visitors: Select Services Visitors: Bo Wells  Nere there any abnormal operational issues onsite? No  Are there any additional supplies/equipment needed? If so, what items and when? PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client? No Has client provided any operational feedback (positive or negative)? Person: Company: XTO								
HcL Acid 0 4,100 4,100 NO Sodium Hydroxide 0 3,700 3,700 No Visitors: Select Services Visitors: Bo Wells  Nere there any abnormal operational issues onsite? No  Are there any additional supplies/equipment needed? If so, what items and when? PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client? No Has client provided any operational feedback (positive or negative)? Person: Company: XTO				Chemical	Usage	Start Inv.	End Inv.	On Order
Visitors: Bo Jackson Visitors: Select Services Visitors: Bo Wells  Nere there any abnormal operational issues onsite?  Vo. SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No. Has client provided any operational feedback (positive or negative)?  Person: Company: XTO								
Visitors: Bo Jackson Visitors: Select Services Visitors: Bo Wells  Nere there any abnormal operational issues onsite?  No  Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person: Company: XTO	<u>.                                    </u>			Sodium Hydroxide	0			No
Were there any abnormal operational issues onsite?  No  Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO	Visitors:	Во	ackson					
Were there any abnormal operational issues onsite?  Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company: XTO	Visitors:	Select	Services					
Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO	Visitors:	Во	Wells					
Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person: Company: XTO								
Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO								
Are there any additional supplies/equipment needed? If so, what items and when?  PVC SCH 80  Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO		nal operation	onal issues onsite	7				
Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person: Company: XTO	10							
Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person: Company: XTO								
Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO								
Have there been any changes to the current schedule, including volumes needed by client?  No  Has client provided any operational feedback (positive or negative)?  Person:  Company:  XTO								
Has client provided any operational feedback (positive or negative)?  Person: Company: XTO	Are there any addition.	al supplies	equipment needs	d? If so, what items and v	vhen?		. 125 - 3860	
Has client provided any operational feedback (positive or negative)?  Person: Company: XTO		al supplies	equipment needs	d? If so, what items and v	vhen?		<u>, 1844</u>	
Has client provided any operational feedback (positive or negative)?  Person: Company: XTO		al supplies	equipment neede	ed? If so, what items and v	vhen?			
Has client provided any operational feedback (positive or negative)?  Person: Company: XTO		al supplies	equipment neede	d? If so, what items and v	vhen?			
Person: Company: XTO	PVC SCH 80					?		
Person: Company: XTO	PVC SCH 80  Have there been any c					?		
Person: Company: XTO	PVC SCH 80  Have there been any c					?		
	PVC SCH 80  Have there been any c					?		
Additional Comments	Have there been any c	hanges to t	he current sched	ule, including volumes ne		?		
Additional Comments	Have there been any c	hanges to t	he current sched	ule, including volumes ne		?	XTO	
	Have there been any c	hanges to t	he current sched	ule, including volumes ne		?	XTO	

Date:	Date: 10/1/2012 Report Number: Unit Number:			Report	Number:	1	13
A					3		
Client:	Х	то		S	hift Onsite Time:	6:00:00AM	am/pm
Location:		sh 49		S	hift Offsite Time:	12:00 PM	am/pm
Site Contact:		ackson				6 hrs	Total hrs
Site Contact:	Samm	ny Dean		Present	Onsite Activities:	Mainte	enance
Processing Hrs T	odav:	0 hrs	Cumulativ	e Processing	Hrs	451	hrs
BBLS Processed		0 bbls	www.communication.communication.com	BBLS Proces			5 bbls
BBLS/Hr Proces		512.5		BBLS/Hr Proc			bbl/hr
Lead Supervisor:	Samm	ny Dean	Readings:	flow back	Volts/Amps	pH	Turbidity
Lead Operator		her Perry	10:00		N/A	N/A	N/A
Crew		ld White	12:00		N/A	N/A	N/A
			14:00		N/A	N/A	N/A
			16:00		N/A	N/A	N/A
			18:00		N/A	N/A	N/A
			20:00		N/A	N/A	N/A
-			Chemical	Usage	Start Inv.	End Inv.	On Orde
			HcL Acid	0	4,100	4,100	NO
Visitors:	Do I	ackson	Sodium Hydroxide	0	3,700	3,700	No
Visitors:		Services					
Visitors:		Wells					
<b>Vere there any abnor</b> IO	nal operatio	nal issues onsite	<b>??</b>				
	al supplies/	equipment neede	ed? If so, what items and v	vhen?			
Are there any addition PVC SCH 80							***************************************
VC SCH 80		he current sched	ule, including volumes ne	eded by client	?	Nan C	
Iave there been any o	hanges to ti		itive or negative)?	eded by client	? ————————————————————————————————————	55 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	
VC SCH 80 lave there been any c	hanges to ti			eded by client	?	XTO	

JSA performed Started sludge pull today did not finished. Will continue pulling sludge on Tuesday 10/02/2012. Bo Jackson will get an electriciar out on location tomorrow to unpluged all the electricity.

10/5/2012		t Number:		
	Cins	Number:		8
XTO		Shift Onsite Time:	6:00:00AM	am/pm
Nash 49	966.	Shift Offsite Time:	12:00 PM	am/pm
Bo Jackson			6 hrs	Total hrs
Sammy Dean	Present	Onsite Activities:	Rig I	Down
Total production and the second secon	Cumulative Processing		0	hrs
	umulative BBLS Proce			5 bbls
512.5 Cu	mulative BBLS/Hr Proc	essed:	#DI	V/0!
Sammy Dean Readin	ngs: flow back	Volts/Amps	pН	Turbidit
Christopher Perry 10:0	0	N/A	N/A	N/A
Reginald White 12:0	0	N/A	N/A	N/A
14:0	0	N/A	N/A	N/A
16:0	0	N/A	N/A	N/A
18:0	0	N/A	N/A	N/A
20:0	0	N/A	N/A	N/A
Chem	ical Usage	Start Inv.	End Inv.	On Orde
HcL A	cid 0	4,100	4,100	NO
Sodium Hy	droxide 0	3,700	3,700	No
Bo Jackson				
Robert Rink				
operational issues onsite?				
operational issues onsite?  upplies/equipment needed? If so, what it	ems and when?			
upplies/equipment needed? If so, what it goes to the current schedule, including vo		nt?		
perational feedback (positive or negative			ХТО	
perational feedback		(positive or negative)?  Company:		

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_			-		

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Figure 1:
Photograph of
filtration granules
used in the
CleanWave
system. The
granules were
cleaned-up prior
to surface
restoration.



Figure 2: Grading of former containment berms. The former berms were either thin spread on location or placed around location to reinforce existing berms (Figure 3).



Figure 3: Re-using material from former containment berms from the CleanWave system to reinforce existing containment berms.



Figure 4: Location graded to pre-existing conditions. Nash Unit #4 is at left; Nash Unit #53SWD at right. Photograph is viewing south.