INFORMATION ONLY

TANDEM ENERGY corporation

A Subsidiary of Platinum Energy Resources, Inc.

REMEDIATION PLAN

PURE STATE #1 PRODUCED WATER TRANSFER FLOWLINE RELEASE

PROJECT REF: NMOCD RP#3397

UL-O (SW¼ of the SW¼) SECTION 36 T19S R34E

LATITUDE: 32° 36.572'N LONGITUDE: 103° 30.749'W

~22 MILES WSW (BEARING 254.5°) OF HOBBS

LEA COUNTY, NEW MEXICO

November 17, 2014

PREPARED FOR TANDEM ENERGY CORPORATION BY:

ALFREDO'S TRUCKING Backhoe Services Inc.

3220 West County Rd, Hobbs, NM 88240

(575) 942-2330; Fax (505) 393-6374; Email john.good@alfredotrk.com

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1.0 Introduction and Background

This Corrective Action Plan (CAP) addresses the produced water and associated crude oil component release from a surface poly produced water transfer flow line. The C-141 report submitted by Mr. Ernie Sanchez, Tandem Energy Corp. (Company) to the NM Oil Conservation Division (NMOCD) indicates no release date. The release was observed by Mr. Tomas Oberding (NMOCD) on October 23, 2014, after a citizen report of the release on October 22, 2014. Mr. Oberding then contacted Mr. Sanchez and notified him of the release. The date of the release can reasonably be assumed to be sometime in the period October 20th to October 21st. The release volume was estimated to be 15-bbl to 20-bbl on the revised C-141 submittal (page 6) with no recovery indicated.

The release site is located on Federal land in Unit Letter B, (NW¼ of the SW¼), Section 1, T20S, R34E. The GPS coordinates are: N32^{o} 36.572' W103^{o} 30.749'.

2.0 Site Description

2.1 Geological Description

This area of Lea County (Pearl Valley) is notable for its predominant and extensive eolian sand surface structure or quaternary origin. Dune formation of the light colored, small grained sand results in variations in elevation and contour. The area is underlain by a thick layer of caliche at depths ranging from a few feet to greater than 25-ft.

2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of area.

A survey of the location was conducted by NM State Land Office biologist Dr. Erin Greenlee on November 4, 2014. The survey included observation of the surface ecology as regards actual or potential habitat for two threatened species known to be present in Lea County; the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) and the Dunes Sagebrush Lizard (*Sceloporus arenicolus*). Dr. Greenlee has decided that the Lesser Prairie Chicken will not be an issue at this remediation site due to no confirmed observations of this species in central Lea County for 20-years. Regarding the Dunes Sagebrush Lizard, Dr. Greenlee has deferred authority to Matt Mathis of the Center of Excellence for Hazardous Materials Management (CEHMM), Carlsbad, NM.

2.3 Area Ground Water

Based on the Chevron Water Table Contour Map for Lea County, the vadose zone depth at this release location is projected to be 75-ft to 80-ft.

2.4 Area Water Wells

There are no recorded or observed water wells within 1000 horizontal feet of the site.

2.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

3.0 Contaminant and Size of Area

The primary contaminant is produced water with some associated crude oil. The release affected area proceeds south from the point of release (POR) ~20-ft, then west ~70-ft (in which two pooling areas formed), then a 15-ft narrow westerly flow path at the terminus. The contaminated area is estimated to be ~1500-ft^2.

The produced water and crude oil associated with this release are considered RCRA Exempt oilfield waste. No evidence of other contaminants is observed.

4.0 Vertical Extent of Contamination

The vertical contamination extent (chlorides) beneath the flow line release area will be determined during of the excavation and disposal of contaminated soil.

5.0 NMOCD Site Ranking Table

1. Ground Water	2. Wellhead Protection	3. Distance to Surface Water
Depth to GW <50 feet: 20 points	If <1000' from water source, or; <200' from private domestic water source: 20 points	<200 horizontal feet: 20 points
Depth to GW 50 to 99 feet: 10 points		200-1000 horizontal feet: 10 points
Depth to GW >100 feet: 0 points	If >1000' from water source, or; >200' from private domestic water source: 0 points	>1000 horizontal feet: 0 points
Ground Water Score = 10	Wellhead Protection Score= 0	Surface Water Score= 0
Site Rank (1+2+3) = 10 + 0 + 0 =10 points		
Total Site Ranking Score and Acceptable Remedial Goal Concentrations		

Parameter	20+	10	0
Benzene	10 ppm	10 ppm	10 ppm
BTEX	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

Contaminant delineation and remedial work to be done at this site will be performed such that the chemical parameters of the soil and the physical parameters of the ground water will be characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the NMOCD publication:

- *Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)*

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes (BTEX^{8260}), will be determined based on the NMOCD Ranking Criteria as follows:

- *Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.*
- *Wellhead Protection Area, i.e., distance from fresh water supply wells.*
- *Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.*

Based on the proximity of the site to area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 10 points with the soil remedial goals highlighted in the Site Ranking Table (pg 4).

6.0 Remediation Action Plan

The contaminated soil within the release affected area will be excavated in 4-ft depth intervals. Representative bottom and side soil samples will be taken and field analyzed for Cl^- ion concentration at each 4-ft interval. All excavated soil indicating Cl^- concentration(s) greater than 1000-ppm will be disposed of at disposal facility licensed by NMOCD to receive contaminated soils above the 1000-ppm Cl^- threshold.

From the 1000-ppm level, the release area will be delineated down to the 250-ppm Cl^- concentration level with appropriate interval testing to definitively determine the 500-ppm level. Delineation will be accomplished by boring or trenching. When this final 1000-ppm to 250-ppm profile is determined (verified by certified laboratory analyses for TPH^{8015}, Benzene, $BTEX^{8260}$ and Chlorides), the COMPANY will opt either for a total cleanup of the site by excavating and disposing of soil down to the 250-ppm Cl^- level, or closing the site with an overlapping 30-mil plastic liner at the 500-ppm Cl^- interval (with NMOCD approval).

Backfill of the excavation will be accomplished by replacement of clean soils excavated from the perimeter of the excavation to achieve benching and sloping in accordance with OSHA standards for excavation safety (29 CFR 1926 Subpart P), and with necessary offsite purchased materials (caliche and/or topsoil). The clean surface blow-sand excavated for sloping will be retained for final cover of the site.

Ingress and egress to site will be from the north side (State of NM land). Transport trucks will be loaded (contaminated soil) and unloaded (clean backfill) at a Tandem well pad ~900-ft north of the release site. A Right-of-Entry permit will be obtained from the State Land Office to allow transport of materials to and from the release site from this well pad. The release affected area is entirely on the Federal side (south) of the Section dividing line. This Section line is fenced with a 3-strand, T-post barbed wire fence. This fence will have to be temporarily removed and replaced daily throughout the duration of the remediation project. When the fence is “removed”, personnel will always be on-site to prevent cattle movement from the State side to the Federal side.

Surface damaged areas will be contoured and re-seeded in accordance with State Land Office and BLM requirements as regards seed type(s), and timing of the re-seeding effort.

Certified soil analyses will be conducted by Cardinal Laboratories, Hobbs, NM. All samples will be transported under proper Chain of Custody protocols.

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Tandem Energy Corporation	Contact: Ernie Sanchez
Address: 1494 Blue Stem Rd, Loco Hills, NM 88255	Telephone No.: (575) 308-0716 (575) 703-6865 (cell)
Facility Name: Pure State #1	Facility Type: PW transfer poly line (surface)

Surface Owner: Federal (BLM)	Mineral Owner State of NM	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	36	19S	34E	0	South	2260	East	Lea

Latitude 32° 36.572'N **Longitude** 103° 30.749'W **Surface Elevation (amsl)** ~3705-ft

NATURE OF RELEASE

Type of Release Produced water with minor TPH component	Volume of Release: 15-20 bbl ??	Volume Recovered: 0 bbl
Source of Release: Produce water transfer surface poly flow line	Date and Hour of Occurrence: Estimate Oct-20 or Oct-21	Date and Hour of Discovery: Oct-22 by right-of-way surveyor
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom? Right-of-way surveyor notified NMOCD-Hobbs	Date and Hour: Oct-22-2014	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Integrity of surface poly line was compromised resulting in 3-4 days of produced water release. Upon notification by NMOCD on Oct-23-2014, Ernie Sanchez of Tandem Energy proceeded to the release site and installed a clamp on the poly line.

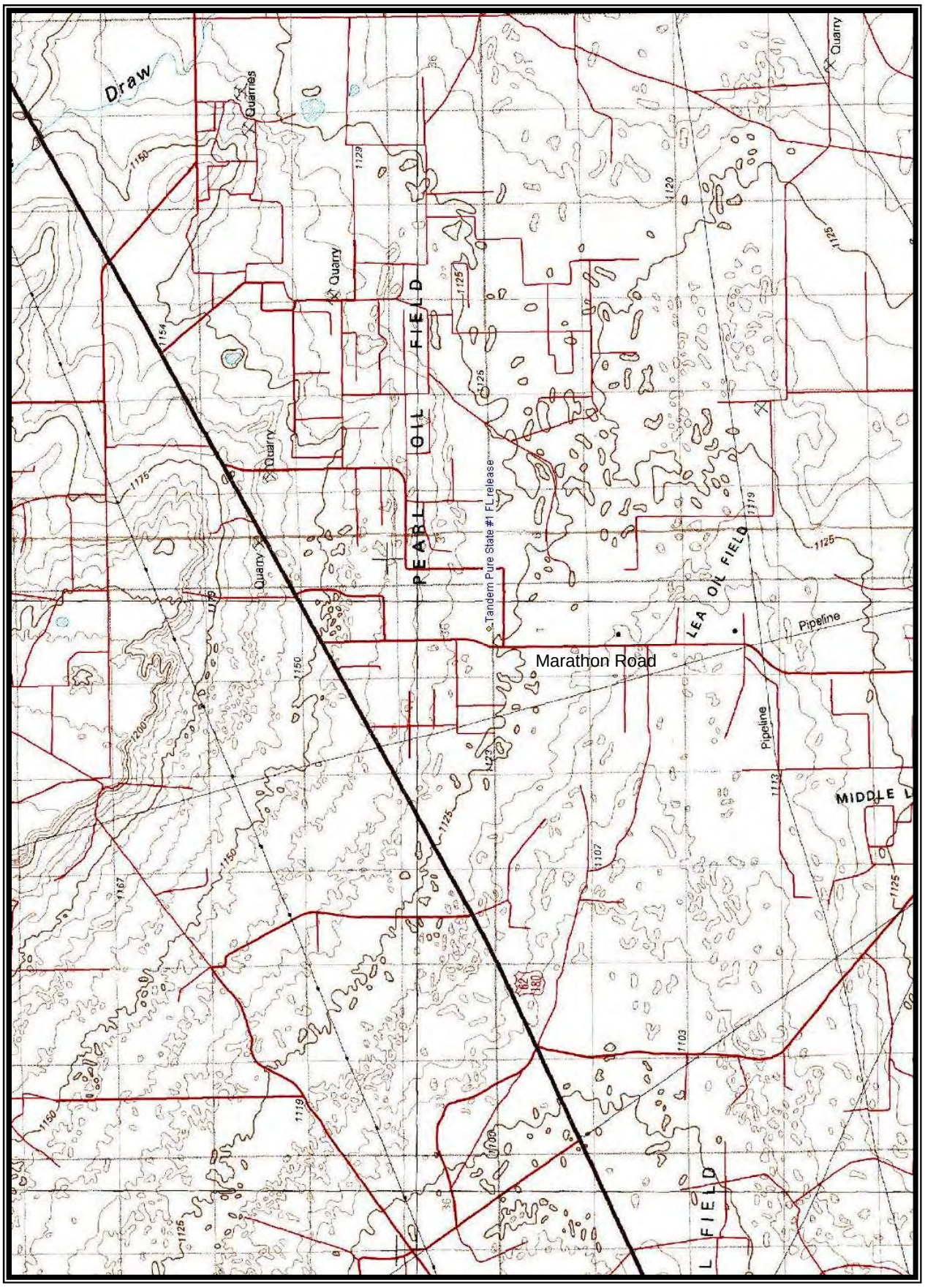
Describe Area Affected and Cleanup Action Taken.*

At the point of release, the flow line extended south under the fence (section line). The entire release area is on Federal land at the north extent of Section 1, T20S, and R34E. The flow proceeded south from the POR ~15-ft, then west ~20-ft where it pooled. The overflow continued west ~20-ft to another smaller pooled area, then terminated in a narrow westerly flow path ~2-ft wide X ~15-ft long. An exact measurement of the irregular affected area was not obtained; a reasonable estimate is ~1,500-ft^2. Tandem Energy has retained Alfredo's Trucking & Backhoe Service (ATBS) to remediate the site to achieve NMOCD approval for closure of the site. ATBS will submit an approvable Corrective Action Plan to NMOCD for this project. Copies of the approved plan will be forwarded to Matthew Hagman (State Land Office-Hobbs) and Jeff Robertson (BLM-Carlsbad). ATBS will obtain a Right of Entry permit from the State Land Office to access the site from a Tandem Energy well pad ~900-ft north of the release.

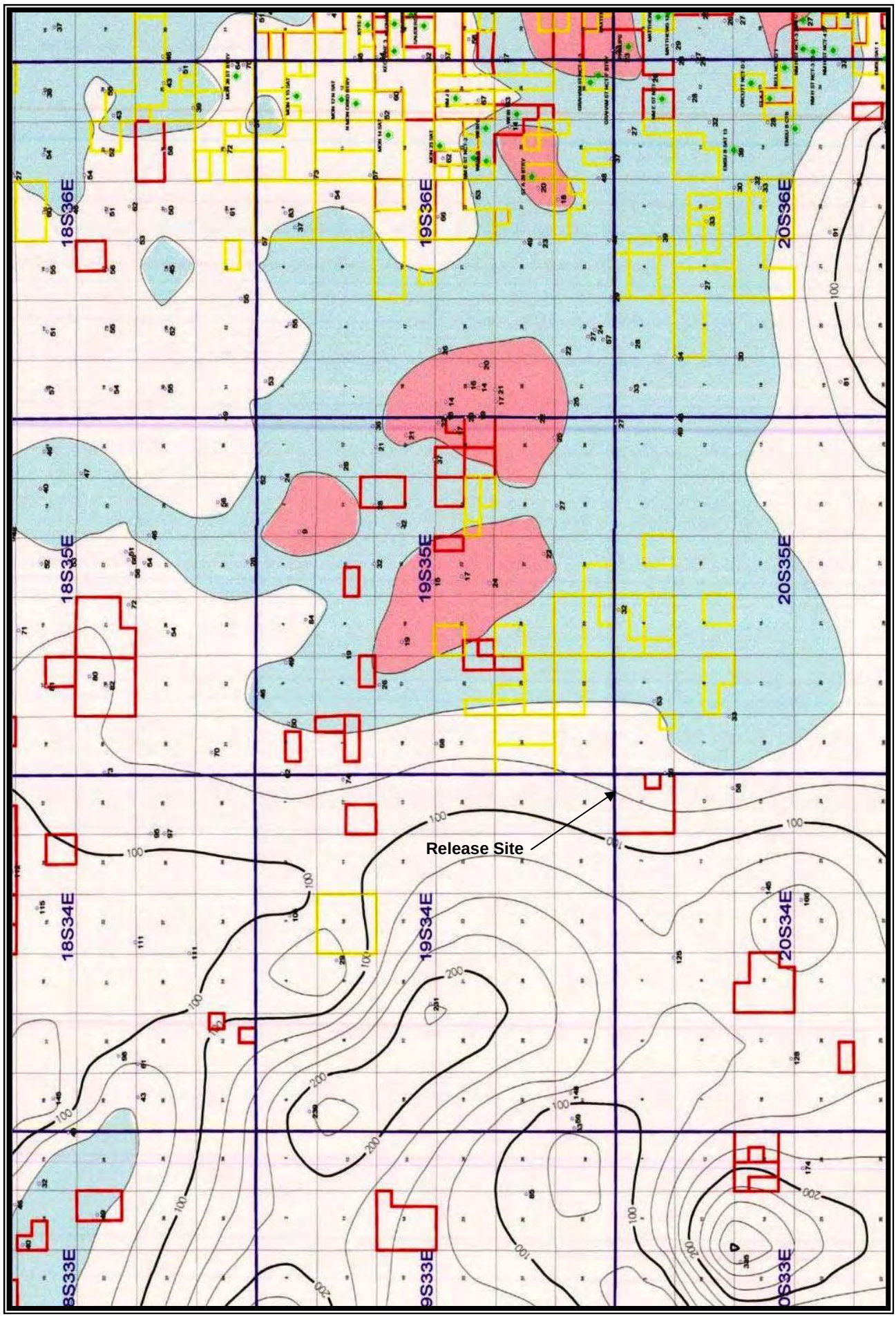
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ernie Sanchez	Approved by Environmental Specialist:	
Title: Field Foreman, Tandem Energy Corp	Approval Date:	Expiration Date:
E-mail Address: esanchez@platenergy.com	Conditions of Approval:	Attached ☐ **RP# 3397**
Date: November 7, 2014 Phone: (575) 703-6865		

* Attach Additional Sheets If Necessary


Draw
Quarries
Quarry
Quarry
Quarry
Quarry
PEARL OIL FIELD
Tandem Pure State #1 FL release
Marathon Road
LEA OIL FIELD
Pipeline
Pipeline
MIDDLE L
L FIELD


Tandem Pure State #1 Release
380'
730'


18S36E
19S36E
20S36E
18S35E
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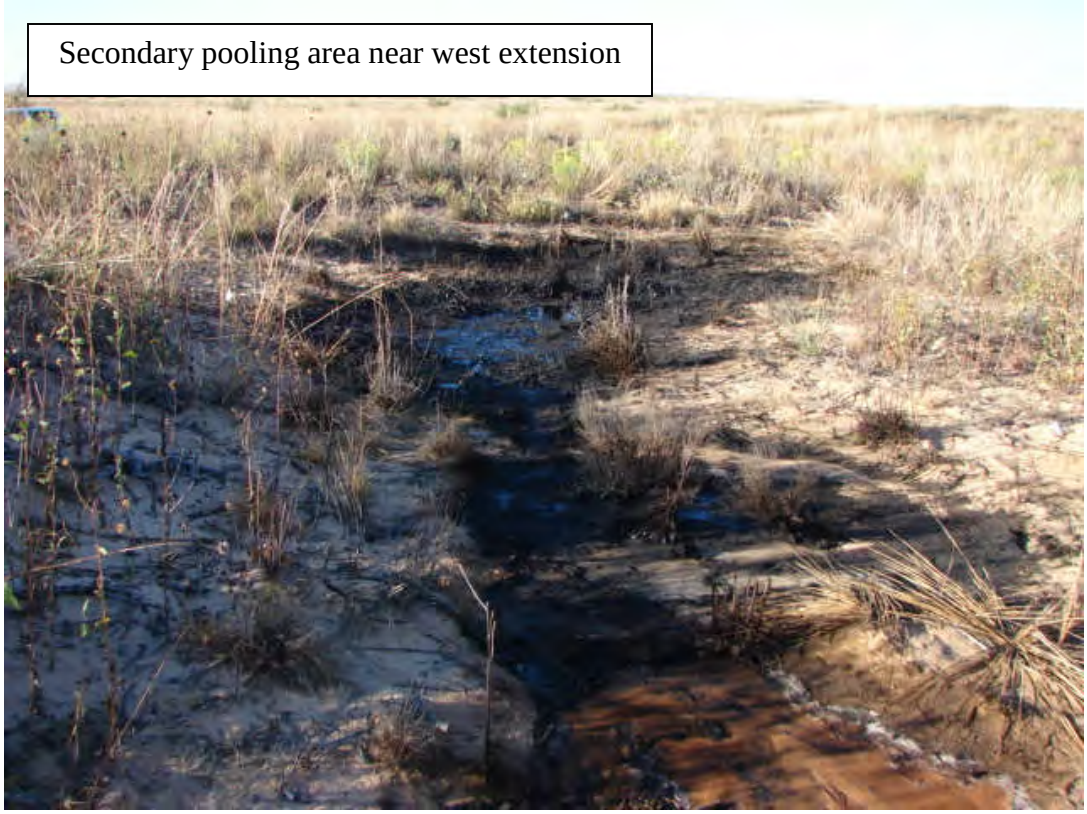
Release Site


POR with repair clamp


Major pooling area nearest POR

Secondary pooling area near west extension



Western terminus of flow path