

Submit 1 Copy To Appropriate District Office  
 District I - (575) 393-6161  
 1625 N. French Dr., Hobbs, NM 88240  
 District II - (575) 748-1283  
 811 S. First St., Artesia, NM 88210  
 District III - (505) 334-6178  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV - (505) 476-3460  
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

Form C-103  
 Revised July 18, 2013

OIL CONSERVATION DIVISION  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

WELL API NO. 30-015-40890
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. UG-3604-0002
7. Lease Name or Unit Agreement Name Lost Tank 35 State SWD
8. Well Number 1
9. OGRID Number 16696
10. Pool name or Wildcat SWD Delaware
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3521.6'

SUNDRY NOTICES AND REPORTS ON WELLS  
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well  Gas Well  Other SWD

2. Name of Operator  
OXY USA Inc.

3. Address of Operator  
P.O. Box 50250 Midland, TX 79710

4. Well Location  
 Unit Letter K : 2630 feet from the South line and 2630 feet from the west line  
 Section 35 Township 21S Range 31E NMPM County Eddy

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

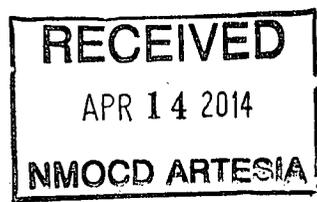
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input checked="" type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
DOWNHOLE COMMINGLE <input type="checkbox"/>			
CLOSED-LOOP SYSTEM <input type="checkbox"/>			
OTHER: <u>Completion</u> <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

SWD-1417-A

See Attached

INITIAL MIT TEST MUST BE WITNESSED BY THE OGD. CONTACT OGD ARTESIA OFFICE TO MAKE SURE TEST IS WITNESSED.



Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE David Stewart TITLE Sr. Regulatory Advisor DATE 4/10/14

Type or print name David Stewart E-mail address: david.stewart@oxy.com PHONE: 432-685-5717

For State Use Only

APPROVED BY: Rebecca Innes TITLE COMPLIANCE OFFICER DATE 4/17/14

Conditions of Approval (if any):

State of New Mexico  
Energy, Minerals and Natural Resources Department

Susana Martinez  
Governor

David Martin  
Cabinet Secretary

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



Jami Bailey, Division Director  
Oil Conservation Division



Administrative Order SWD-1417-A  
April 7, 2014

ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION

Pursuant to the provisions of 19.15.26.8B NMAC, OXY USA, Incorporated (the "operator"), seeks an administrative order to utilize its proposed Lost Tank 35 State SWD No. 1 located 2630 feet from the South line and 2630 feet from the West line, Unit letter K of Section 35, Township 21 South, Range 31 East, NMPM, Eddy County, New Mexico, for produced water disposal purposes. This Order supersedes Administrative Order SWD-1417, approved on May 10, 2013, that permitted disposal of produced water into the upper Delaware-Bell Canyon formation through perforations from approximately 4355 feet to 4965 feet.

THE DIVISION DIRECTOR FINDS THAT:

The application has been duly filed under the provisions of 19.15.26.8B NMAC and satisfactory information has been provided that affected parties as defined in said rule have been notified and no objections have been received within the prescribed waiting period. The applicant has presented satisfactory evidence that all requirements prescribed in 19.15.26.8 NMAC have been met and the operator is in compliance with 19.15.5.9 NMAC.

IT IS THEREFORE ORDERED THAT:

The applicant, OXY USA, Inc. (ORID 16696), is hereby authorized to utilize its proposed Lost Tank 35 State SWD Well No. 1 (API 30-015-40890) located 2630 feet from the South line and 2630 feet from the West line, Unit letter K of Section 35, Township 21 South, Range 31 East, NMPM, Eddy County, for disposal of oil field produced water (UIC Class II only) into Bell Canyon and Cherry Canyon formations of the Delaware Mountain Group through perforations from approximately 4355 feet to **approximately 6320 feet**. Injection will occur through internally-coated, 3 ½-inch tubing and a packer set within 100 feet of the top of the permitted interval.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the disposed water enters only the approved disposal interval and is not permitted to escape to other formations or onto the surface. This includes the well construction proposed and described in the application.

**Additionally, the operator shall complete the well as provided in the *Lost Tank 35 State SWD #1 Completion, Revision Date: March 26<sup>th</sup>, 2014*, submitted by the operator to the**

**Bureau detailing the changes in the cementing program. The changes address the open annulus between the 7-inch production and 9 5/8-inch intermediate casings from approximately 2718 feet to surface. The operator is to notify the Division's District II office if there is a deviation from the proposed completion program and provided an alternate program for approval by the Division's District II office to satisfy the cementing requirements of Division Order R-111-P.**

**The operator shall run an injection survey (tracer/temperature or equivalent) of the injection interval within two (2) years after commencing disposal into this well. The operator will supply both the Division's District II office and Santa Fe Bureau office with a copy of the survey log.**

After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11A. NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

The wellhead injection pressure on the well shall be limited to **no more than 871 psig**. In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well.

The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formation. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate Test.

The operator shall notify the supervisor of the Division's District II office of the date and time of the installation of disposal equipment and of any MIT test so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

Without limitation on the duties of the operator as provided in Division Rules 19.15.29 and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's District II office of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil or gas from around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

The injection authority granted under this order is not transferable except upon division approval. The division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

The division may revoke this injection permit after notice and hearing if the operator is in violation of 19.15.5.9 NMAC.

The disposal authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations into the subject well. One year after the last date of reported disposal into this well, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the disposal authority granted herein.



JAMI BAILEY  
Director

JB/prg

cc: Oil Conservation Division – Artesia District Office  
New Mexico State Land Office - Oil, Gas and Minerals Division  
Bureau of Land Management – Carlsbad District Office

**OXY USA INC**  
**Lost Tank 35 State SWD #01**  
**API#: 30-015-40890**  
**Location: T21S R31E Sec. 35. 2630' FSL & 2630' FWL**  
**Latitude: 32.4326326925762, Longitude: -103.74613825826**  
**Eddy County, New Mexico**

**PROJECT ENGR:** Mike Fisher  
**OFFICE PHONE:** (832) 540-5753  
**CELL PHONE:** (713) 552-8585

**ALT. ENGR:** Jeff Garoon  
**OFFICE PHONE:** (713) 552-8596  
**CELL PHONE:** (281) 630-3127

**Project:**

Stimulate and complete the vertical salt water disposal well in 4 stages within the Bell Canyon and Lower Cherry Canyon formations followed by remedial cementing operations of the primary 7" casing.

**History:**

Spud Date: 10/28/2013  
 TD Date: 10/27/2013  
 Rig Release Date: 11/24/2013  
 Completion Date: TBA

**Well Information:**

<b>API #</b>	30-015-40890
<b>Estimated Completion Cost:</b>	
<b>Anticipated Inj. Rate:</b>	~3500 bbls/d
<b>Elevation:</b>	KB: 3559 ft ASL; KB: <b>25 ft</b> ; Ground Elevation: 3534 ft ASL
<b>Max hole angle:</b>	Vertical
<b>TD:</b>	6,352' MDKB
<b>PBTD:</b>	6,259' MDKB (top of float collar)
<b>Casing Record:</b>	<ul style="list-style-type: none"> <li>• 11-3/4" 42# H-40 STC csg to 852' w/ cmt to surface.</li> <li>• 9-5/8" 32# J-55 Ultra-FJ csg to 4340' w/ cmt to surface.</li> <li>• 7" 26# L-80 LTC csg to 6,345' w/ TOC estimated @ ~3730'</li> </ul> <p style="text-align: center;"><b>Max Surface Treating Pressure = 5000 psi (WH rating)</b></p>
<b>DV Tool Locations:</b>	No DV Tool
<b>Marker Joint</b>	No Marker Joint
<b>Tubing Record:</b>	No tubing in well.
<b>Completion Fluid:</b>	8.7 ppg cut brine

**Prior to Job:**

- Clear location.
- MI & set anchors.
- MI & spot working tanks. Set up to be determined by WST/ WOCS.
- Please see "List of Vendors & Equipment to be Considered for Vertical Fracs" to help assist with checklist of equipment.

**Proposed Operations (See below for procedure):**

- Clean-out to PBTD w/ PU (**Complete**);
- Data Acquisition/ Logs (**Complete**):
  - a. Make run with W/L GR-CBL-VDL-CCL-Neutron Porosity log from 6,200 (or as deep as possible) to surface w/ 1000 psi on casing;
- Pressure Test Casing;
- WL prep Stage 1;
- Frac well via plug and perf method using the attached schedule;
- Perform remedial cementing operations;
- Clean out well to PBTD with DDPU and reverse rig;
- Blow down well to flow back tanks;
- Run tubing;
- Hand well over to operations for SWD duties.

**Misc. Well Information:**

All depths are measured depths. Correlate perforation depths to KB.

**Proposed Perforations:**

<b>Stage 1</b>		<b>Pump Rate:</b>			<b>60 BPM</b>		<b>500000 lbs</b>		
<b>Sand</b>	<b>SN Top</b>	<b>SN Btm</b>	<b>Gross Pay</b>	<b>Top Perf</b>	<b>Btm Perf</b>	<b>Density</b>	<b># of Holes</b>	<b>Phasing</b>	<b>Hole Size</b>
<b>Cherry Canyon</b>	5495	5530	35	5,510	5,511	6	6	60	
	5595	5680	85	5,670	5,671	6	6	60	
	5700	5770	70	5,740	5,741	6	6	60	
	5780	5900	120	5,805	5,806	6	6	60	
				5,875	5,876	6	6	60	
	6100	6200	100	6,150	6,151	6	6	60	
			410						
							36		
<b>Stage 2</b>		<b>Pump Rate:</b>			<b>60 BPM</b>		<b>500000 lbs</b>		
<b>Sand</b>	<b>SN Top</b>	<b>SN Btm</b>	<b>Gross Pay</b>	<b>Top Perf</b>	<b>Btm Perf</b>	<b>Density</b>	<b>Shots</b>	<b>Phasing</b>	<b>Hole Size</b>
<b>Bell Canyon</b>	4935	4985	50	4,965	4,966	6	6	60	0.43
	5000	5020	20	5,010	5,011	6	6	60	0.43
	5095	5130	35	5,120	5,121	6	6	60	0.43
	5350	5400	50	5,375	5,376	6	6	60	0.43
	5410	5450	40	5,435	5,436	6	6	60	0.43
<b>Total</b>			195				30		
<b>Stage 3</b>		<b>Pump Rate:</b>			<b>60 BPM</b>		<b>300000 lbs</b>		
<b>Sand</b>	<b>SN Top</b>	<b>SN Btm</b>	<b>Gross Pay</b>	<b>Top Perf</b>	<b>Btm Perf</b>	<b>Density</b>	<b># of Holes</b>	<b>Phasing</b>	<b>Hole Size</b>
<b>Bell Canyon</b>	4620	4670	50	4,650	4,651	6	6	60	0.43
	4710	4760	50	4,740	4,741	6	6	60	0.43
	4790	4840	50	4,827	4,828	6	6	60	0.43
	4855	4900	45	4,885	4,886	6	6	60	0.43
<b>Total</b>			195				24		
<b>Stage 4</b>		<b>Pump Rate:</b>			<b>60 BPM</b>		<b>300000 lbs</b>		
<b>Sand</b>	<b>SN Top</b>	<b>SN Btm</b>	<b>Gross Pay</b>	<b>Top Perf</b>	<b>Btm Perf</b>	<b>Density</b>	<b>Shots</b>	<b>Phasing</b>	<b>Hole Size</b>
<b>Bell Canyon</b>	4380	4410	30	4,400	4,401	6	6	60	0.43
	4420	4450	30	4,434	4,435	6	6	60	0.43
	4470	4490	20	4,479	4,480	6	6	60	0.43
	4510	4535	25	4,529	4,530	6	6	60	0.43
	4550	4600	50	4,560	4,561	6	6	60	0.43
<b>Total</b>			155				30		

### **Perforation Guns**

The guns are 4" with premium charges, 0.43" EHD w/ 6 JSPF on 60 degree phasing. W/L Service Company will provide the appropriate setting tool to run the fully composite flow-thru frac plugs (caged ball type).

### **Perforations Reference**

Perforations to be referenced to the GR-CNL-CCL-CBL log run during the well preparation phase. Correlate depths to KB from table on page #1.

### **Frac Plugs**

Fully composite flow-thru frac plugs (caged ball type). Plug company will provide tool hand during the job to ensure plugs are set up and run correctly with 3<sup>rd</sup> party setting tool.

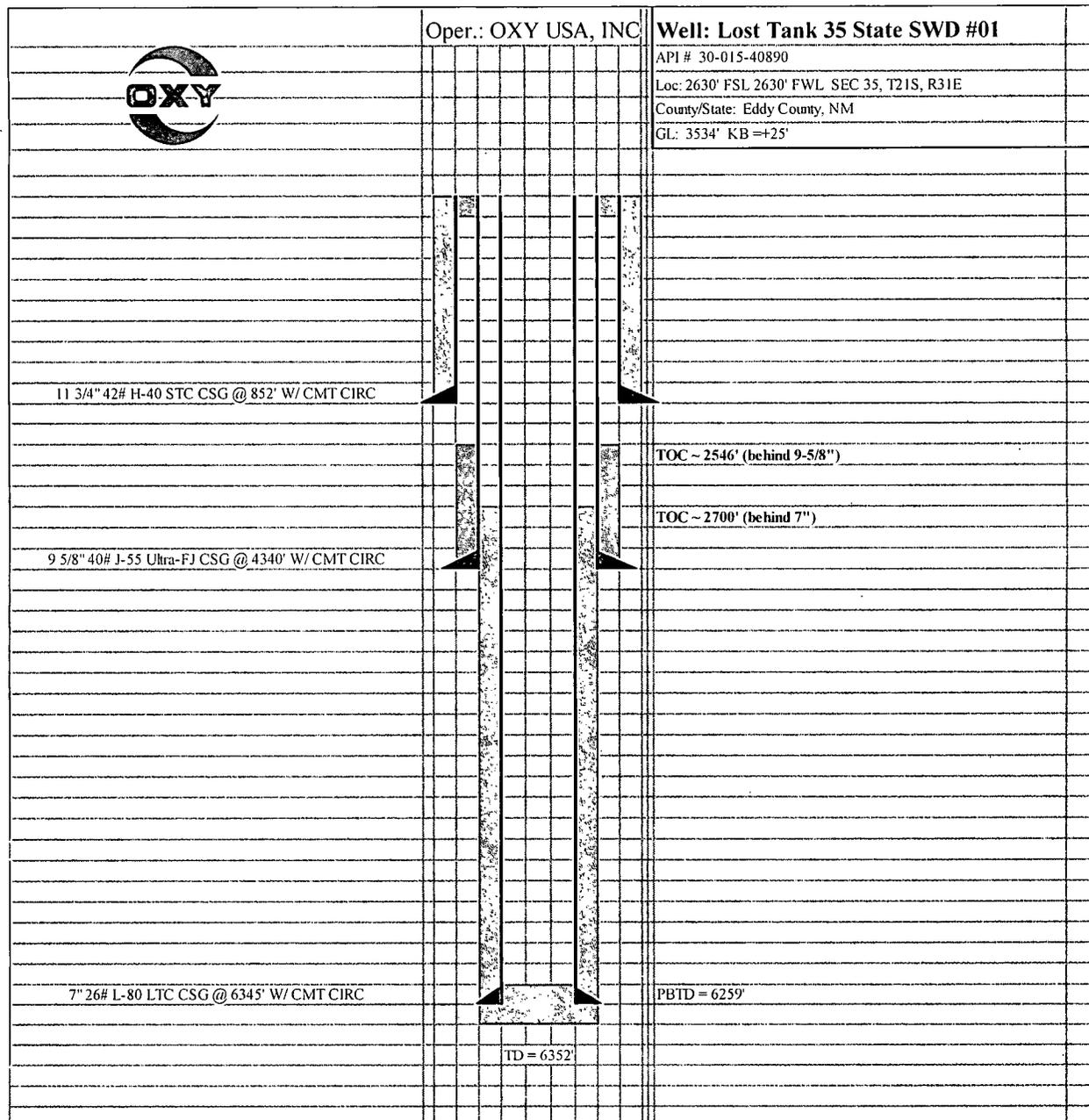
### **Frac Water Volume Required**

~20,000 bbls (includes 10% excess).

### **Frac Sand Required**

~1,600,000# of 16/30 brown sand.

**Wellbore Diagram (Pre-Completion):**



**RECOMMENDED PROCEDURE:**

**WARNING:** A POISONOUS GAS - HYDROGEN SULFIDE (H<sub>2</sub>S) - A HIGHLY TOXIC COLORLESS GAS THAT IS HEAVIER THAN AIR MAY BE PRESENT AT THIS LOCATION AND/OR PRESENT IN THE GAS AND LIQUIDS INJECTED OR PRODUCED FROM THIS WELL. PLANS MUST BE REVIEWED DEALING WITH H<sub>2</sub>S SAFETY PRIOR TO WORKING ON THIS WELL. CHECK WITH FOREMAN CONCERNING LOCAL CONDITIONS.

**Well Preparation and Run Logs:**

Clean location, set and test anchors. Install frac valve.

1. Check location for hazardous conditions.
2. MIRU WLU. NU 7" frac stack.
3. RU Pump truck and test casing and wellhead to maximum of **5000psi** only. (Wellhead rated to **5000psi** only).

**7.0" 26# L-80 LTC CSG @ 6345' W/ TOC @ 2720'.**

**ID = 6.276" - DID = 6.151" - BURST = 7240 PSI - COLLAPSE = 5410 PSI**

4. RU WL. PU & RIH w/ WL guns to perf first frac stage per above schedule.  
**NOTE: If operation requires changing depth of caged ball plugs or perforating schedule, take into account the nearest collar depth based upon the GR-CCL-CBL acquired post drilling.**
5. Perforate first stage (**5510' – 6151'**) per attached procedure. Arm guns & break down perfs w/ 15% NEFE HCl. POOH and check guns.
6. RD WLU.

**Frac:**

7. Rig up frac and WLU. Set maximum Pressure to **5000psi**. Frac Stage # 1 as per attached vendor procedure.  
**NOTE: Ensure both the 7" x 9 5/8" and 9 5/8" x 11 3/4" annulus are monitored during the frac job to ensure no unexpected pressure is seen. If pressure is seen notify the completion engineer immediately.**

8. PU guns and 7.0" CBP (caged ball type), RIH and set plug at **5480'**. Perf stage 2 (**4965' – 5436'**) per the above perf schedule. POOH, check guns, and LD WL.
9. Frac Stage # 2 as per attached vendor procedure.
10. PU guns and 7.0" FTCBP, RIH and set plug at **4950'**. Perf stage 3 (**4650' – 4886'**) per the above perf schedule. POOH, check guns, and LD WL.
11. Frac Stage # 3 as per attached vendor procedure.
12. PU guns and 7.0" FTCBP, RIH and set plug at **4600'**. Perf stage 4 (**4400' – 4561'**) per the above perf schedule. POOH, check guns, and LD WL. RD and release WLU.
13. Frac Stage # 4 as per attached vendor procedure.
14. RD and release frac crew.

### Remedial Cement Work

15. MIRU DDPU and NU BOP;
16. Attempt to latch on and release slips on the 7" production casing;  
**NOTE: The slips must be free with a degree of movement in tension on the 7" to successfully determine free pipe.**
17. MIRU WL and RIH w/ Free point tool;  
**Log from 3200' (~500' below CBL identified TOC) to surface.**
18. LD Freepoint tool, and reset the casing in the slips;
19. PU 7" RBP, RIH and set 100' below the freepoint;
20. Pressure test casing to 1500psi to confirm RBP is holding;
21. Dump 5sx (~5cu/ft) of sand to cap RBP;  
**Should correspond to ~23ft of sand on top of RBP.**
22. PU 6.0" drift and RIH and tag sand and confirm depth then POOH;
23. PU WL guns (4 shots @ 4spf, 90deg phasing, 0.42" EHD);
24. RIH and perforate 30' above the identified freepoint;
25. POOH and LD WL guns;
26. Open the 7" x 9-5/8" casing annulus valve and pump into the 7" casing @ 2bpm, establish a circulation rate and circulate 2 x bottoms up (~150bbls);
27. PU and RIH w/ cement retainer on 2-7/8" WS and set at 50' above the perforated interval. Pressure test backside to 2000psi to ensure retainer is good;
28. Pump 1000 ft of tubing volume (~5bbls) to ensure circulation is still present;

29. Mix and pump 83bbls (includes 10% excess) 13ppg cmt slurry until maximum squeeze pressure or maximum squeeze volume @ 3-4bbl/min;

**NOTE: DO NOT EXCEED 2500psi.**

30. Once sufficient displacement fluid is pumped to fully displace the cement there should be ~8bbls cmt to surface assuming returns are not lost during the job;

31. Sting out of cmt retainer and circulate 2 x WS volume to clean the tubing using treated water;

32. RDMO cmt company and wait for 24hrs.

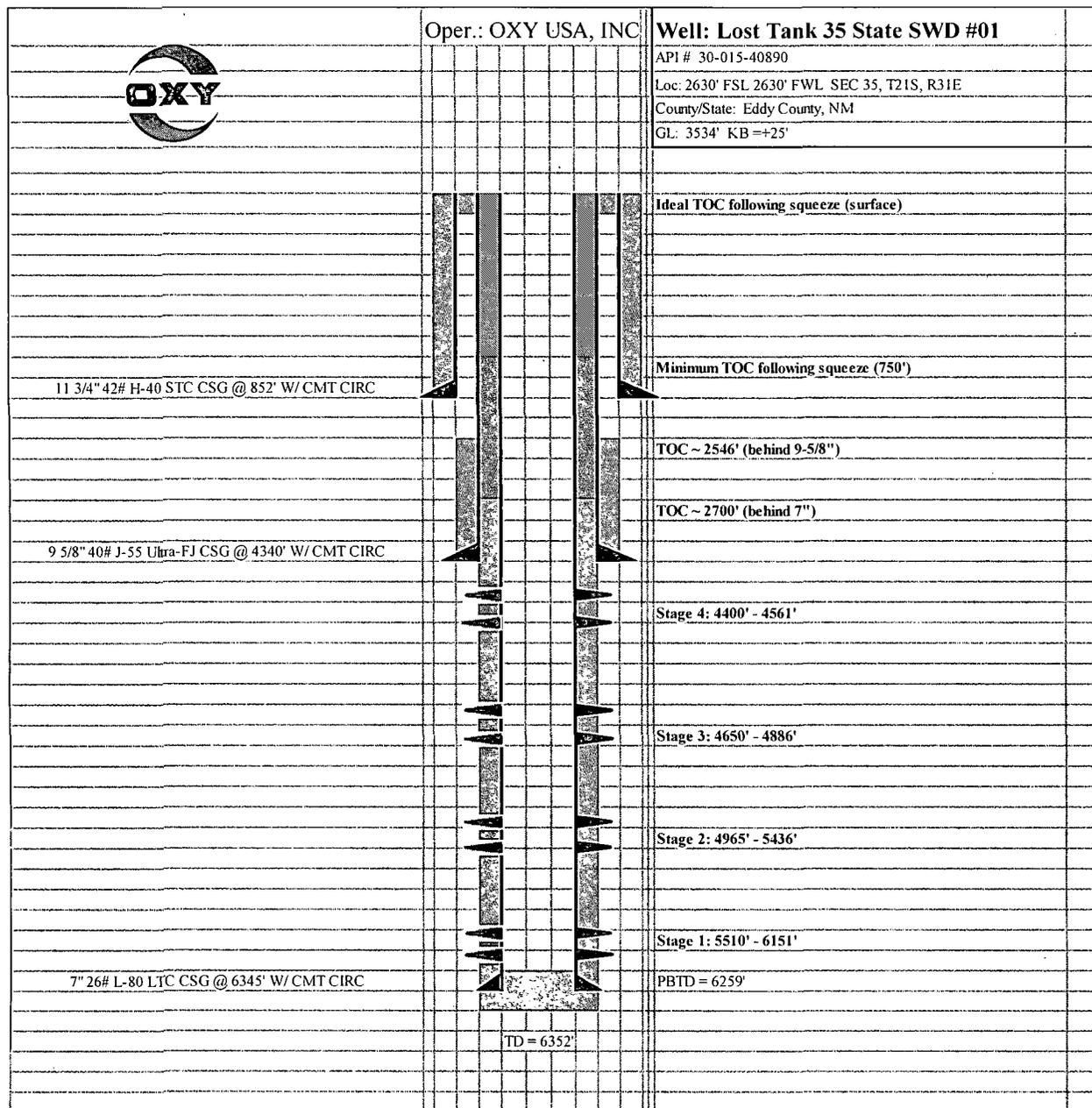
33. RU WL, PU CBL and log from PBTD (cmt retainer) to surface.

34. Identify new TOC if returns were lost during the job.

35. If TOC is 750' or higher continue with the well cleanout procedure below.

36. If TOC is deeper than 750' then an additional cmt squeeze will be required, and the above process should be repeated.

**Wellbore Diagram (Post Cement Squeeze):**



### **Wellbore Clean-out**

37. RU DDP, Reverse Unit and Air Unit with N2 membrane. PU workstring and collars w/ 5.875" – 6.125" mill. Drill out cmt retainer at ~ **2600'** followed by CBP's at **4600'**, **4950'** and **5480'** per attached Best Practices procedure for cleaning. Be sure all recommendations in the Best Practices Procedure are implemented. Ensure enough air/foam is used to maintain circulation and hole cleaning.
38. Continue cleaning to the PBTB @ **6259'**. POOH w/ work string and lay down.
39. RU WLU. PU perf guns and re-perforate 4 zones as per procedure. Ensure to check guns after each perforation run. RD WL.
40. Flow back well through frac stack directly to frac tanks at low rates and do not surge the formation. Flow well until it dies, or fluid returns are 'clean'. Dispose of waste water at a commercial waste facility.

#### **NOTE: DO NOT SEND FLOWBACK WATER TO AN OXY SWD WELL**

41. RU WLU. PU AS-1X packer, profile nipple, bottom half of on/off tool, pump off plug and set packer at **4370'** (~30' above top perf).
42. ND frac stack. NU wellhead.
43. PU and RIH with 3.5" 7.7# J-55 Duo-line tubing and top half of on/off tool. Circulate packer fluid. Land out on/off tool and tubing.
44. Test the back side of the tubing to confirm packer, on/ off tool and tubing integrity.

#### **NOTE: Ensure MIT is witnessed as per requirement of SWD wells.**

45. Pressure up on tubing to pump open the isolation plug.
46. Hand well over to surface ops and put onto SWD operations ASAP.

**NOTE: The 7" x 9 5/8" and 9 5/8" x 11 3/4" annulus' are to be monitored for the life of the well and production engineer notified immediately of any pressure deviations.**