



**Whole Earth Environmental, Inc.**

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Katy, Tx. 77494  
281.394.2050  
whearth@msn.com

June 2, 2009

**RECEIVED**

JUN 03 2009

**HOBBSOCD**

NMOCD  
1625 N0. French Dr.  
Hobbs, NM 88241

Attn: Larry Johnson

Dear Mr. Johnson:

Enclosed, please find a copy of our site investigation results and planned remediation protocol for the Gandy Wasserhund Eidson brine station spill located approximately 12 miles west of Lovington.

I checked the NMOCD website but was unable to find an RP number for the event. I'll be checking with you over the next few days to obtain and will certainly include within the final closure plan.

Warmest personal regards,

Mike Griffin  
President  
Whole Earth Environmental, Inc.



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JUN 03 2009

HOBBSOCD

## Executive Summary

### Location

The site is located approximately five miles north of the City of Buckeye, Lea County, New Mexico on fee lands. The primary land use is grazing of cattle however extensive oil and gas operations are prevalent in the area. The area is semi-arid with a net precipitation / evaporation amount of  $-73''$  per year. The legal description is: **S31, T16S, R35E.**

### Investigation Activities

Whole earth collected soil samples from the pad area and conducted a series of field electrical conductivity tests on the apparently affected areas. The EM-38 survey revealed high chloride concentrations generally at depths less than three feet below ground surface. Coring the site revealed elevated but generally superficial chloride concentrations within the spill area.

The site has an extensive history of similar spills under previous ownership. The most recent spill was generally confined to the first 10 feet of vertical depth. Two deep corings utilizing split spoon sampling revealed one area of potential concern.

The area immediately adjacent to the most recent spill to include the western ditch was previously excavated and a layer of clay installed. The clay significantly retarded the vertical migration of fluids revealing only minor concentrations at depths up to 15' below ground surface, (bgs). However the area east of the culvert located approximately 300' northeast of the facility revealed significant chloride concentrations to depths of up to 15' bgs.

Depth to groundwater is estimated to be between 70-85' below ground surface.

### Remediation

To date, 980 cubic yards of salt impacted soils have been excavated and sent to commercial disposal at the Gandy / Marley processing facility. An equivalent volume of proctored clay has been backhauled to re-fill the excavated areas. We propose to set a clay liner beneath all affected areas to a minimum thickness of 6" and backfill atop the clay with a minimum of 2' of compacted topsoil.

District I  
1625 N French Dr, Hobbs, NM 88240  
District II  
1301 W Grand Avenue, 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  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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**HOBBSOCD**

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company	Gandy Corporation	Contact	Larry Gandy
Address	P.O. Box 2140, Lovington, NM 88260	Telephone No.	575-396-0522
Facility Name	Eidson State	Facility Type	Brine and Fresh Water Station
Surface Owner	Eidson Ranch	Mineral Owner	NM
		Lease No.	25-26883

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	31	16s	35e	567	South	162	West	Lea

Latitude. 32° 52' 23" Longitude 103° 30' 16"

**NATURE OF RELEASE**

Type of Release	Brine water	Volume of Release	1800 bbl.	Volume Recovered	750 bbl
Source of Release	Open valve	Date and Hour of Occurrence		Date and Hour of Discovery	05/03/09
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mark 9:00 am		
By Whom?	Cecil Guillory	Date and Hour	05/03/09 10:00 am		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*  
  

WATER @ 76'

Describe Cause of Problem and Remedial Action Taken.\*  
Vandals removed lock and opened valve on brine tank running water down bar ditch. Vacuum trucks picked up fluids and hauled to SWD.

Describe Area Affected and Cleanup Action Taken.\*  
Bar ditches north of battery. One call made, Remediation Plan will be submitted.

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:	<i>Larry Gandy</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name:	Larry Gandy	Approved by	<i>Jeffrey Lakin</i> <small>District Supervisor</small>
Title:	Secretary/Treasurer	Approval Date:	05/05/09
E-mail Address:		Expiration Date:	07/03/09
Date:	05/04/09	Conditions of Approval:	SUBMIT FINAC C-141 BY
Phone:	575-396-0522	Attached	<input type="checkbox"/>
		IRP-09-5-2172	

\* Attach Additional Sheets If Necessary

FGRL091230950



## **Exhibit Index**

- A. Driving Instructions
- B. Plat Map of Location
- C. USGS 7.5' Map
- D. Satellite View of Location – Zoom out
- E. Satellite View of Location – Zoom in
- F. EM-38 Electromagnetic Survey 0-2.5
- G. OSE Water Report
- H. OCD Soil Summary Report
- I. Field Titration Results
- J. Boring Summary
- K. Laboratory Analytical Results
- L. C-144

GANDY WASSERHUND EIDSON STATION LEAK  
LOT 4 SEC 31 - T16S - R35E  
GPS LAT & LON NAD27 (DECIMAL)  
N32.87299 / W103.50371

DRIVING DIRECTIONS: In Lovington @ intersection of Main St. and AVE D go W. on AVE D. 7.14mi to intersections of HWY 238, turn L. onto HWY 238 and go 5.28mi to site located on R. sided of HWY 238.

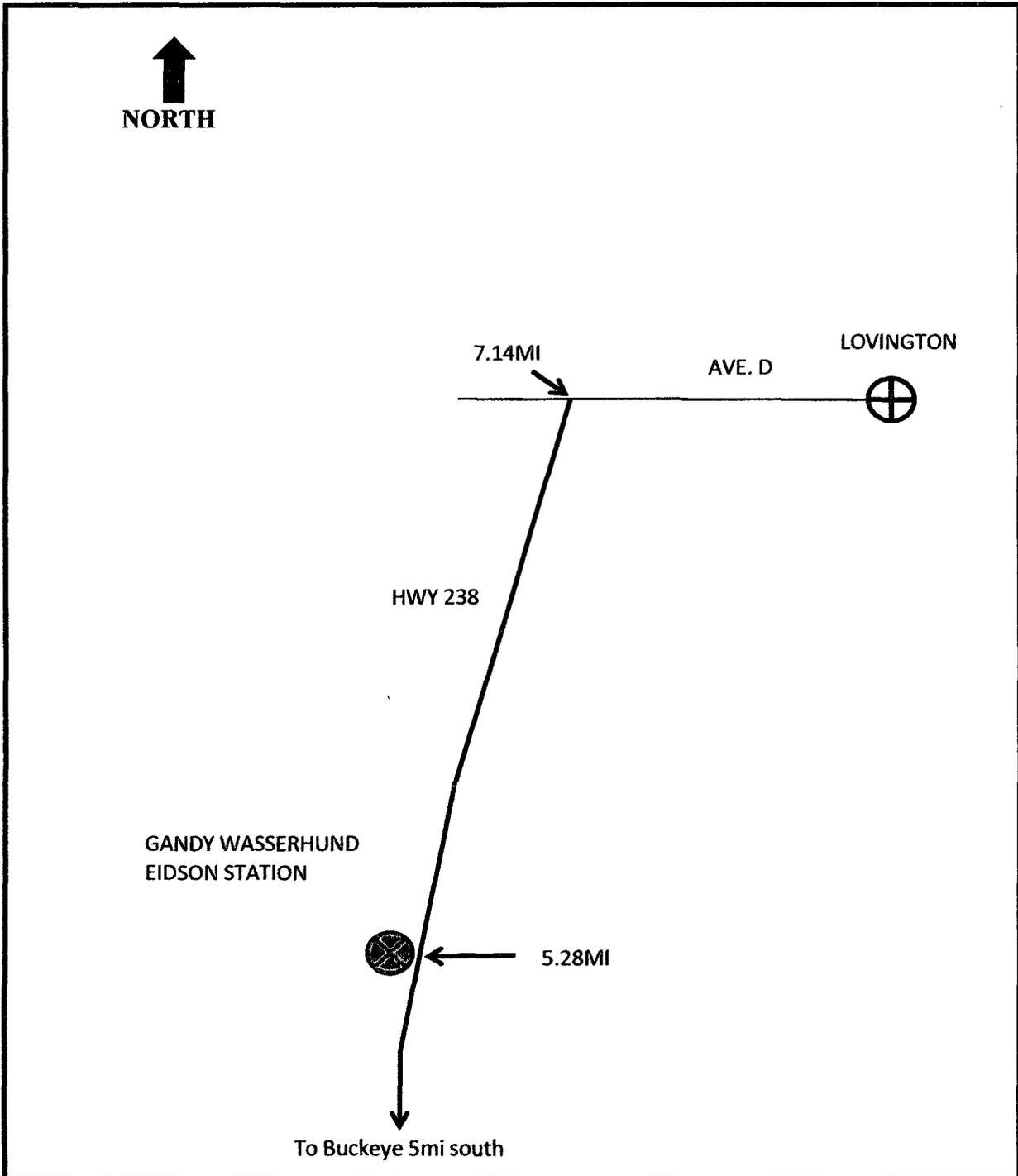






Image ©2009 DigitalGlobe

©2009 Google™

Imagery Date: Feb 9, 2009

lat: 32.673364° lon: -103.602651° elev: 4023 ft

Eye alt: 5623 ft



Eldson Station

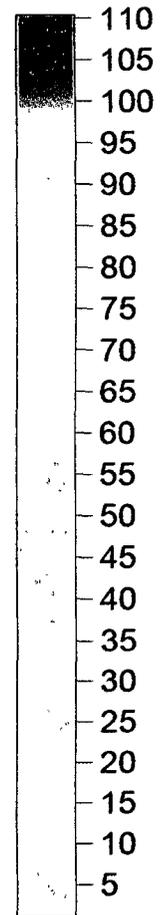
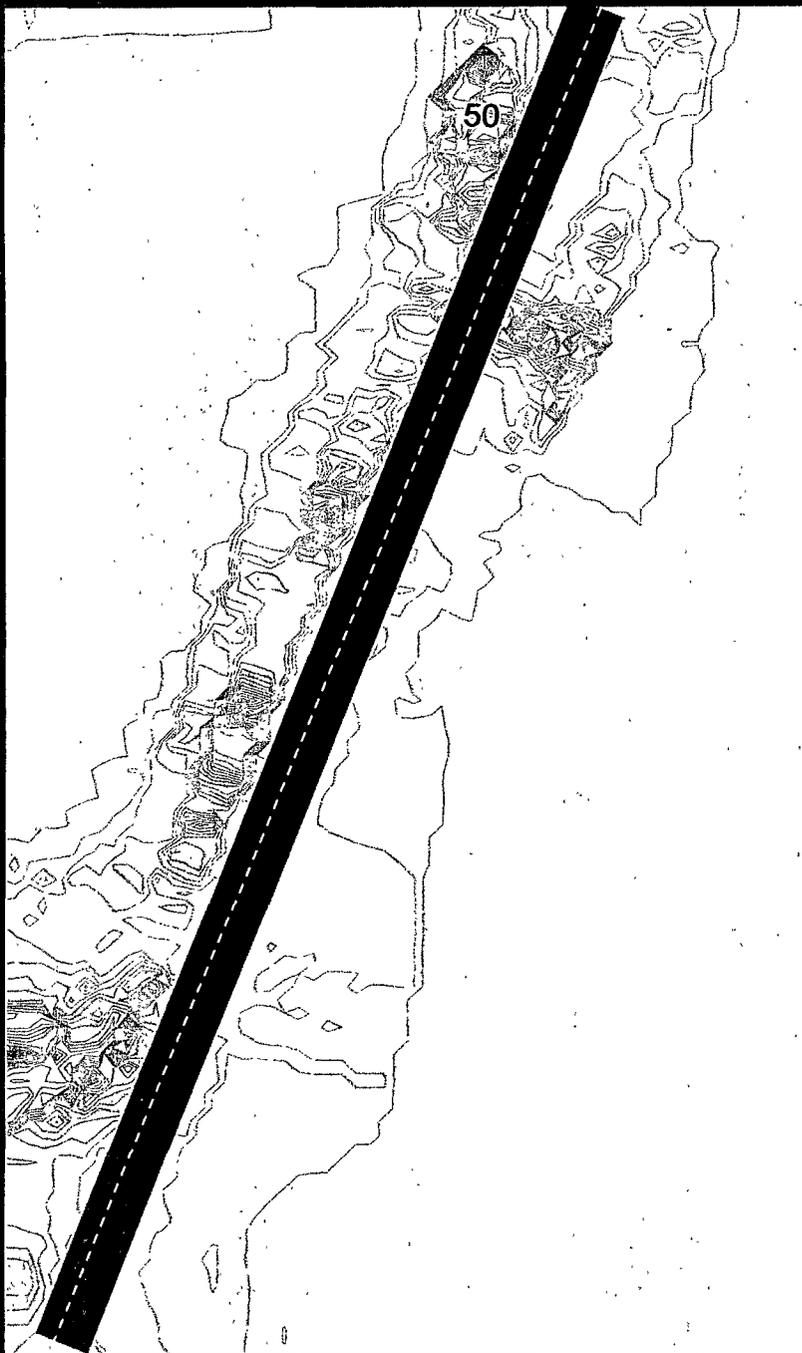
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Imagery © 2009 DigitalGlobe  
© 2009 Tele Atlas  
lat: 32.676664 lon: -103.602651 elev: 1029.0

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Eqal 232211

Gandy Wasserhund Eidson  
EM-31 Electromagnetic Survey  
0-17' Below Ground Surface





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y Distance	Depth Well	Depth Water	Water Column
L 10270	PRO	LE	4	1	3	31	16S	35E	640072	3638635	526	180	70	110
L 10142	SRO	LE	4	3	4	36	16S	34E	639305	3638120*	605	200	84	116
L 10482	PRO	LE	3	3	4	31	16S	35E	640695	3638141*	785	190	75	115
L 10482 2	PRO	LE		3	4	31	16S	35E	640796	3638242*	892	165		
L 06956 (E)	PRO	LE	2	2	4	01	17S	34E	639729	3637119*	1031	150	90	60
L 02312	PRO	LE	4	4	01	17S	34E	639637	3636617*	1542	124	71	53	
L 02312 APPRO	PRO	LE	4	4	01	17S	34E	639637	3636617*	1542	124	71	53	
L 07380	PRO	LE	3	4	3	06	17S	35E	640315	3636529*	1656	152	80	72
L 10113	PRO	LE	4	3	30	16S	35E	640373	3639849*	1775	178	70	108	
L 06878 (1) EXP	PRO	LE	1	1	07	17S	35E	640045	3636225*	1914	125	60	65	
L 06342	STK	LE	4	2	35	16S	34E	637986	3639003*	2110	162	85	77	
L 03011	PRO	LE	4	4	02	17S	34E	638030	3636581*	2439	121	80	41	
L 03011 APPRO	PRO	LE	4	4	02	17S	34E	638030	3636581*	2439	121	80	41	
L 06766 (E)	PRO	LE	4	1	1	12	17S	34E	638538	3636087*	2465	160	90	70
L 10474	PRO	LE	4	3	2	35	16S	34E	637584	3638995	2479	165	70	95
L 05806	PRO	LE	2	2	11	17S	34E	638036	3636179*	2708	155	105	50	
L 06771 (E)	PRO	LE	1	1	4	12	17S	34E	639154	3635500*	2741	165	86	79

Average Depth to Water: **79 feet**

Minimum Depth: **60 feet**

Maximum Depth: **105 feet**

**Record Count: 17**

**Basin/County Search:**

County: Lea

**UTMNAD83 Radius Search (in meters):**

Easting (X): 639910

Northing (Y): 3638135

Radius: 3000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.











GANDY WASSERHUND EIDSON STATION LEAK  
 LOT 4 SEC 31 - T16S - R35E  
 GPS LAT & LON NAD27 (DECIMAL) N32.87299 / W103.50372  
 BORE FIELD TITRATION RESULTS

DATE	GPS	BORE	DEPTH	CL-	SOIL DESCRIPTION
5/12/09	N32.87229 W103.50371	#1	5'BGS	170	tanish sandy rocky caliche, damp no odor, very hard indurated caliche below 6'
	N32.87336 W103.50352	#2	12"BGS	1894	brown sandy clayey dirt moist no odor, hard indurated caliche below unable to bore further
	N32.87452 W103.50303	#3	6"BGS	N/A	top 6" soft rocky caliche damp, no sample pulled, abandoned bore pull off to ck. out another job. No sample
5/13/09	N32.87429 W103.50278	#4	13"bgs	N/A	0>3" brown sandy rocky dirt moist, 3">13" hard indurated caliche bored for 1hr no progress abandon bore no sample
	N32.87429 W103.50279	#5	3"	N/A	bored on site for 30min. Did not advance more than 1/4" abandoned bore and move to bore #6 no sample
	N32.87443 W103.50272	#6	5'BGS	4139	brown sandy clayey dirt moist no odor
			10'BGS	2835	brown sandy clayey rocky dirt w/caliche mix moist no odor
			15'BGS	3919	tan sandy rocky caliche damp no odor
			20'BGS	1588	tan sandy rocky caliche damp no odor
24'BGS	1140	bore.			
5/18/09	N32.87298 W103.50374	#7	5'BGS	353	white sandy rocky caliche damp no odor
			10'BGS	259	white sandy rocky caliche damp no odor
			15'BGS	298	white sandy rocky caliche damp no odor
			20'BGS	390	white sandy caliche damp no odor
			25'BGS	371	hard white sandy caliche damp no odor
			30'BGS	409	hard white sandy caliche damp no odor
			35'BGS	369	hard white sandy caliche damp no odor
			40'BGS	408	hard white sandy caliche damp no odor
			45'BGS	444	hard white sandy caliche damp no odor
			50'BGS	423	hard white sandy caliche damp no odor
			55'BGS	406	hard white sandy caliche damp no odor
			60'BGS	460	hard white sandy caliche damp no odor
65'BGS	390	hard white sandy caliche damp no odor			
70'BGS	N/A	INDURATED SANDSTONE no sample			

5/18/09	N32.87420 W103.50311	#8	5'BGS	298	tan sandy rocky caliche damp no odor
			10'BGS	259	tan sandy rocky caliche damp no odor
			15'BGS	225	tan sandy rocky caliche damp no odor
	N32.87485 W103.50300	#9	5'BGS	669	tan sandy rocky caliche damp no odor
			10'BGS	215	tan sandy rocky caliche damp no odor
			15'BGS	195	tan sandy rocky caliche damp no odor
	N32.87440 W10350272	#10	5'BGS	351	tan sandy rocky calcihe damp no odor
			10'BGS	253	tan sandy rocky calcihe damp no odor
			15'BGS	327	tan sandy rocky calcihe damp no odor
			20'BGS	445	tan sandy rocky calcihe damp no odor
			25'BGS	598	tan sandy rocky calcihe damp no odor
			30'BGS	314	tan sandy rocky calcihe damp no odor
			35'BGS	112	tan sandy rocky calcihe damp no odor
	40'BGS	47	tan sandy rocky calcihe damp no odor		
	N32.87426 W103.50269	#11	5'BGS	181	hard tan sandy rocky calcihe damp no odor
			10'BGS	79	hard tan sandy rocky calcihe damp no odor
	N32.87360 W103.50404	#12	5'BGS	104	white sandy rocky caliche damp no odor
10'BGS			96	hard white sandy rocky caliche damp no odor	
15'BGS			53	tan sandy rocky caliche damp no odor	

all samples kept on ice, prepared for lab, jarred and delivered on 5-19-09

samples sent to lab and analysis requested

bore #6 @ 5'bgs: BTEX, TPH 418.1, 8015M,CL-

bore #7 @ 5'bgs: BTEX, TPH 418.1, 8015M,CL-

bore #7 @ 65'bgs: CL-

bore #8 @ 15' bgs: CL-

bore #9 @15' bgs: CL-

bore #10 @ 40' bgs: CL-

bore #11 @ 10' bgs: CL-

bore #12 bckgrd @ 15'bgs: CL-

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bore #7 @ 65'bgs: CL-

bore #8 @ 15' bgs: CL-

bore #9 @15' bgs: CL-

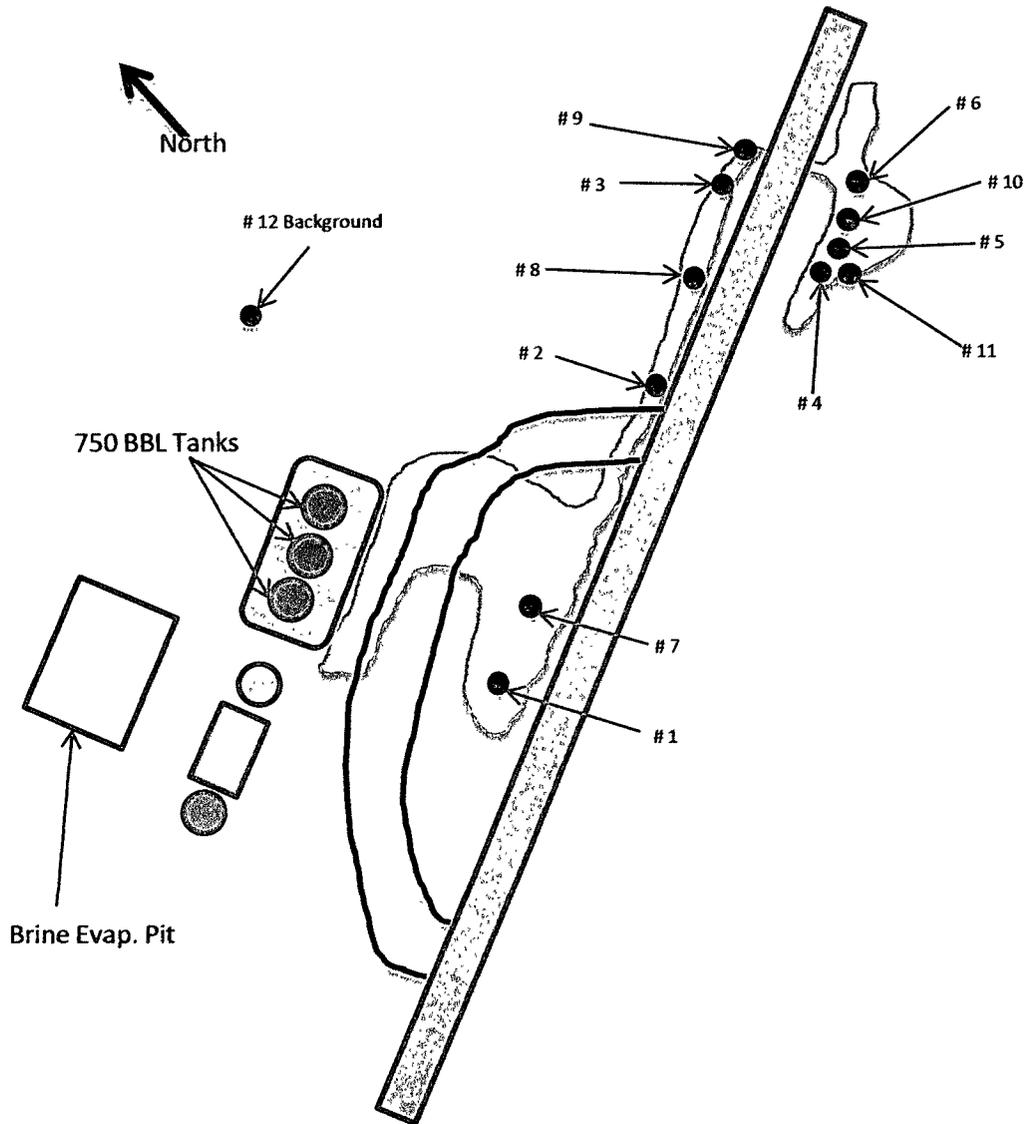
bore #10 @ 40' bgs: CL-

bore #11 @ 10' bgs: CL-

bore #12 bckgrd @ 15'bgs: CL-



Gandy Wasserhund Eidson Brine Station  
Spill Diagram  
Bore Hole Locations













**Gandy Wasserman Eidson Station  
Brine Spill  
Remediation Protocol**

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**1.0 Purpose**

This protocol is to provide a detailed outline of the steps to be employed in the remediation and closure of the Gandy Wasserman Eidson spill in Lea County, New Mexico.

**2.0 Scope**

This protocol is site specific for the Gandy Wasserman Eidson remediation project.

**3.0 Preliminary**

Prior to any field operations, Whole Earth Environmental shall conduct the following activities:

**3.1 Client Review**

3.1.1 Whole Earth shall meet with cognizant personnel within Gandy and the NMOCD to review and approve this protocol.

3.1.2 Changes to this protocol will be documented and submitted for final review by all parties prior to the initiation of actual field work.

**4.0 Safety**

4.1 Prior to work on the site, Whole Earth shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all safety related issues with the appropriate Client personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 Anyone allowed on to location must be wearing sleeved shirts, hardhats, steel toed boots, and long pants. Each vehicle must be equipped with two way communication capabilities.

4.4 Prior to any excavation, New Mexico One Call will be notified. If lines are discovered within the area to be excavated they shall be marked with pin flags on either side of the line at maximum five-foot intervals.

## 5.0 Restoration

5.1 We will perform an electromagnetic survey of the affected area to determine the lateral spread of chlorides. Areas showing the highest concentrations shall be vertically cored to obtain the vertical delineation of the site. We will field titrate for chloride concentrations with representative samples sent to Cardinal Laboratories for confirmation purposes.

5.2 All surface soils containing chloride concentrations exceeding 4,000 ppm chloride will be excavated and sent to commercial disposal.

5.3 Soils contained within puddled areas shall be excavated to a minimum 3' depth. All affected areas shall be excavated to a minimum depth of 2' below ground surface. A clay liner will be installed into the excavated areas and compacted as necessary to prevent future vertical migration of moisture.

5.4 Soils containing chloride concentrations <4,000 ppm chlorides may be mixed and blended with fresh top soils to an average chloride concentration of <1,000 ppm and placed atop the clay liner. The area will then be contoured to replicate existing elevations.

## 6.0 Closure Report

6.1 At the conclusion of the project, Whole Earth shall prepare a closure report that contains the following minimum information:

- Photographs of the location prior to remediation
- Photographs of the site at the point of leveling
- Photographs of the liner to include overlap detail
- USGS 7.5' maps of the location
- Satellite photographs of the location
- Copies of this protocol
- Plat map
- Final contour photographs
- Copy of the initial EM-38 survey
- Boring logs
- Laboratory analytical results
- Disposal Manifests