522084

Analysis Report
Task 1 of AP-088
Construction of Geologic Contour Maps

(AP-088: Analysis Plan for Evaluation of the Effects of Head Changes on Calibration of Culebra Transmissivity Fields)

Task Number 1.3.5.3.1.2

Report Date: April 17, 2002

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Management Review: Frank D. Hansen, 6822, Repository Performance and Certification Department — 4/23/02 Date

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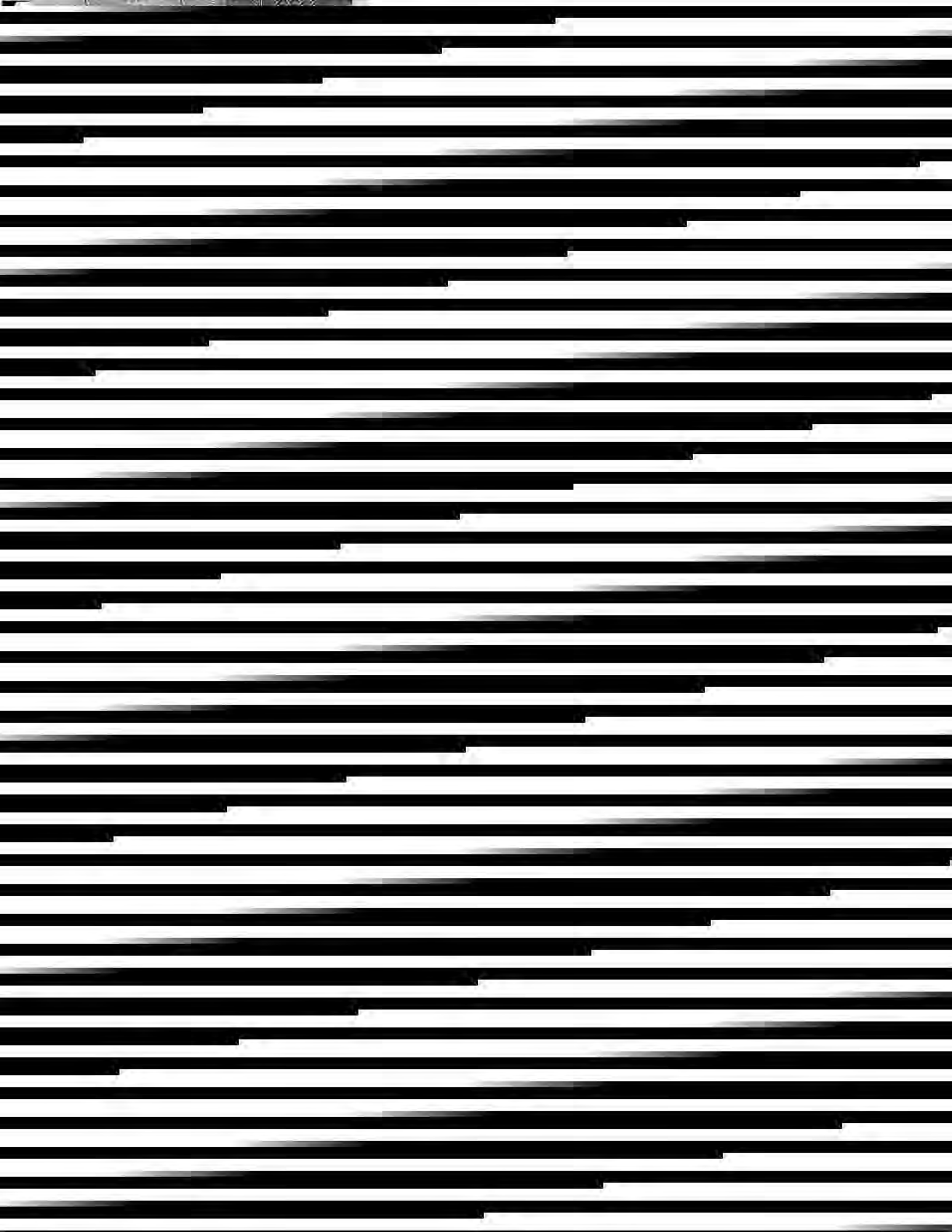
WIPP:1.3.5.3.1.2:TD:QA:PRRP1:Pkg #522085



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April 17, 2002

Analysis Report for Task 1, AP-088, Construction of Geologic Contour Maps

Introduction

This analysis report has been prepared and submitted to meet the requirements of Task 1 of AP-088 Analysis Plan (effective 3/20/02) for evaluation of the effects of head changes on calibration of Culebra transmissivity fields.
The analyst is Dennis W. Powers, Ph.D., Consulting Geologist, Anthony, TX 79821.

The general area for this study comprises 12 townships, located in township T21S to T24S, ranges R30-32E. The boundaries for subsequent tasks may be drawn differently to suit various needs, and an appropriate subset of the information provided in this report may be extracted for use. The data provided in this report were acquired through standard geological techniques.

Because most of the information for this report is derived from drillholes, a basemap (Drillhole ID Numbers) is included with drillholes plotted by UTM (NAD27, Zone 13) coordinates. Drillhole ID Numbers are the key to drillhole data in the Source Tables A and B attached to this report.

Task 1 Elements

Three general factors have been identified with the potential to affect the transmissivity of the Culebra in the vicinity of the WIPP site:

A) thickness of overburden above the Culebra,
B) reduction in thickness of the upper Salado Formation by dissolution, and
C) spatial distribution of halite in the Rustler Formation below and above the Culebra.

As a basis for further analysis, factor A is represented by a contour map. Factor B is represented on a map as an approximate margin of the area beginning to be affected by dissolution of the upper Salado. Factor C is delineated on a map by lines that represent as nearly as possible the boundary of the distribution of halite in the Los Medaños, Tamarisk, and Forty-niner Members of the Rustler Formation in the study domain.

Task 1, Factor A. The analysis plan calls for a map of the thickness of the overburden above the Culebra. The report deviates from the analysis plan by providing a structure contour map of the elevation of the top of the Culebra Dolomite Member (Elevation of the Top of Culebra). Data for this map are included in Source Table-B.

As part of Task 2, thickness of Culebra overburden will be calculated at grid points. The basic concept is that values for the elevation of the top of the Culebra can be interpolated at useful grid points between contours on the structure map. Those Culebra elevation values can be subtracted from surface elevations derived from digital maps at those same grid points. Such a map will be more useful than a map of overburden thickness derived solely from data at the existing, irregularly spaced drillholes. Robert M. Holt will explain this method in more detail for Task 2. Thus the requirement for overburden thickness will be met as part of Task 2.

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Task 1, Factor B. The analysis plan lists the reduction of thickness of the upper Salado by dissolution as a possible factor contributing to Culebra transmissivity. The analysis report deviates from the Analysis Plan. A map (Thickness from Top of Culebra to Base of Vaca Triste (m)) is provided showing the margin or boundary of the area where the upper Salado has been dissolved. The thickness of this interval is a useful guide to locating this boundary. This approach varies slightly from the concept of directly relating the amount of dissolution to Culebra transmissivity. Robert M. Holt will discuss the use of this margin as an indicator statistic for Task 2.

The upper Salado has been, and presumably still is being, dissolved along the eastern margin of Nash Draw. On the basis of limited core information, Holt and Powers (1988) suggested that formations overlying the dissolving upper Salado in Nash Draw are affected in proportion to the amount of Salado dissolution. The most direct way to estimate the spatial distribution of dissolution is to have cores of the upper Salado and basal Rustler and knowledge of the thickness to marker beds (MB) in the upper Salado. The upper Salado has not been cored frequently, but geophysical logs from oil and gas wells, and descriptive logs of cores or cuttings from potash drillholes, provide considerable amount of evidence of the thickness of the lower Rustler and upper Salado, even though cores and cuttings are no longer available from industry potash drillholes.

Potash industry geological logs examined at the Bureau of Land Management (BLM) in Carlsbad, NM, are quite variable in the quality of description and the stratigraphic interval described. Drillholes from the 1930's and 1950's typically are the most descriptive; recent drillholes are commonly useless for this project because no strata are described above portions of the McNutt potash zone of the Salado, near the middle of the formation.

The top of the Culebra and the base of the Vaca Triste are the most consistent stratigraphic markers spanning the upper Salado that are recognizable across various types of records. As a guide to the limits or bounds of upper Salado dissolution, a map of the thickness from top of Culebra to base of Vaca Triste was prepared. In conjunction with previous work by Powers and Holt (1995) and the evidence of the structure of the top of Culebra (see Factor A), an approximate boundary of dissolution was drawn.

Task 1, Factor C. The boundaries of halite in the three non-carbonate members of the Rustler have been drawn several times on the basis of various criteria. For the most part they do not vary significantly. In the map (Rustler Halite Margins) drawn for this report, the margins are based principally on the work of Powers and Holt (1995), which is a continuation of work reported by Holt and Powers (1988). As discussed in Powers and Holt (1995), the boundaries drawn here vary slightly from those drawn by Snyder (1985). There are two reasons: 1) we divide the Los Medaños Member (Powers and Holt, 1999; formerly called the unnamed lower member) into two separate halite-bearing units (Powers and Holt, 2000), and 2) our methods differed in that we added geophysical log signatures to identify halite in areas where cores are not available. The

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map (Rustler Halite Margins) includes a general diagram showing the relationship of halite-bearing strata to other members.

The margins for halite have now been drawn in the area north of the WIPP site around the northeastern arm of Nash Draw based on the descriptions of halite encounters in the Rustler Formation in potash drillholes. In addition, a few areas have been modified (from Powers and Holt, 1995) to the south and west of the WIPP based on the records from potash drillholes as well as the records of drilling H-12 and H-17 for the WIPP. A table is included (Halite Depth Relative to Culebra in Potash Drillholes) that provides the basis for extending the halite margins in the areas where potash drillhole data are now available.

In 12 potash drillholes, halite was reported above the intercepts of the Culebra or Magenta Dolomite Members. The boundaries for M-3/H-3 and M-4/H-4 margins have been drawn north of the WIPP based on these data. The depth below the Culebra at which halite was reported has also been used to draw the boundaries of the lower (M-1/H-1) or the upper (M-2/H-2) halite-bearing units of the Los Medaños in this area. Anhydrite A-1 divides the M-1/H-1 (below) and M-2/H-2 (above) intervals. M-2 (no halite) is about 3 m (10 ft thick. If halite is reported within about 10 ft of the base of Culebra or is clearly above A-1, H-2 is considered to be present. The M-1/H-1 interval is about 110-120 ft (33.5-36.6 m) thick at the WIPP site. In potash drillholes north of the WIPP site, where halite was reported less than 110 ft (33.5 m) below the Culebra, H-1 is present.. Within the zone for H-1, other drillholes frequently reveal depths to halite less than 33.5 m.

It should be noted that the report of "top of salt" or first salt in records for potash drillholes does not consistently mean the same thing and is frequently not the uppermost halite. It may instead be the first halite that is encountered after coring begins or the first unit that is dominantly halite. Detailed inspection of logs sometimes shows halite described from cuttings, with a summary report of "top of salt" much deeper. In some cases, it appears "top of salt" is an estimate of where the Salado-Rustler contact should be.

Data Sources and Quality Assurance

For the main records, four large-format printed maps have been included:

Drillhole ID Numbers

Elevation of the Top of Culebra (m)

Thickness from Top of Culebra to Base of Vaca Triste (m)

Rustler Halite Margins.

Source Tables A and B attached to this report are the sources of the locations and data values printed on the first three maps. Source Table A presents information about the drillhole name and location, including UTM coordinates by which they are plotted. Values for some outcrops and for

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some township and range coordinates plotted on maps are also included in the first part. Source Table B presents the data values used for the Culebra elevation and the thickness of the interval between top of Culebra and base of Vaca Triste. The basic values, which come from interpreted geophysical logs, basic data reports, logs of other drillholes (e.g., potash), or other reports (Holt and Powers, 1988; Powers and Holt, 1995; Richey, 1989), are included so the calculated values (i.e., elevation and thickness) can be corroborated.

The original sources of geological data for this analysis report are mainly Powers and Holt (1995) and Holt and Powers (1988) and new information derived by log interpretation by Powers. Geophysical logs used in these earlier reports were interpreted by Powers, and data used were checked according to QA procedures in effect at IT Corporation at the time of each report. They are accepted here, and only slight modifications have been made with time, mainly where transcription errors have been discovered. All of the data can be independently checked; basic data reports are available for WIPP drillholes, geophysical logs for oil and gas wells are available commercially or at offices of the Oil Conservation Division (New Mexico) in Artesia and Hobbs, and potash drillhole information is in files that can be accessed for stratigraphic information at the Bureau of Land Management, Carlsbad, NM. No proprietary data are included.

Appendix A includes checkprints of geologic and elevation data where there were not previously available.

Discussion

There are some common elements in the maps estimating Salado dissolution, Culebra structure, and Rustler halite margins. One element is in the area of UTM coordinates 615000 (Easting) and 3592000 (Northing). Potash drillhole data define an area where the Top of Culebra to Base of Vaca Triste is thinner, apparently indicating upper Salado dissolution. Halite is also not present in the lower halite-bearing part of the Rustler (M-1/H-1). Without additional information, it is not possible to distinguish between upper Salado dissolution and the possibility that halite has been removed from M-1/H-1 in that area.

Some areas have been identified where it is clear that halite has been dissolved from the M-3/H-3 interval after deposition of the Rustler. In the vicinity of drillholes H-19b0 and south, cores of several WIPP drillholes show brecciation of the upper Tamarisk Member anhydrite in response to dissolution. Another area, previously discussed in Holt and Powers (1988), Powers and Holt (1995), and Beauheim and Holt (1990), is around WIPP 13, and it may represent an outlier of salt left behind during syndepositional removal of halite from the M-3 areas west of the WIPP site (Powers and Holt, 2000). These areas have been indicated in the maps, but they have not been extended interpretively as was done in Beauheim and Holt (1990). The depositional margins of halite in these units is the likely area where dissolution, if any, has taken place since deposition of the Rustler. It has clearly been dissolved along that area from H-19b0 to the south.

Computers and Software

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The following is a summary of the various personal computer technologies (software and hardware) used in the process of compiling and analyzing the Culebra T field source data for Task 1 of Analysis Plan AP-088. Three software applications were utilized in the creation, identification, and organization of drillhole data records: *Microsoft Access 97 SR-1; Microsoft Excel 97 SR-1; and Microrim R:Base 6.0.* A conversion program developed by the U.S. Army Corps of Engineers, *Corpscon for Windows 5.11.08,* was used to convert State-Plane coordinates (NAD 27) into UTM (NAD 27) coordinates where location information was available solely in State-Plane coordinates. Plots and graphs were generated using *Grapher 3.03,* a two-dimensional graphing system developed by Golden Software, Inc. The graphic files were then imported into *Adobe Illustrator 8.0* for formatting, and finally exported as *Adobe Acrobat 3.0* files for printing. Word processing needs were accomplished using *Word 97 SR-1.* All software was run on a *Dell Dimension XPS R400* with an operating system of *Microsoft Windows 98.* Large format maps were printed at Kinko's from Acrobat (pdf) files.

Electronic files attached to this report are in Excel 97, Acrobat 3.0, or Word 97 formats.

Routine Calculations

Two routine kinds of calculations were made to support this work. The first is simple subtraction of values in the data table to obtain either an elevation for the Culebra (Reference Elevation - Depth to Culebra) or the thickness of the interval between the base of the Vaca Triste and the top of the Culebra (Base Vaca Triste - Top Culebra). A table of 10 such values is included (Appendix B) where the values were calculated using a standard hand calculator (Casio fx-300W) to verify that the formula used in Excel 97 properly calculated the values. As Excel 97 is a standard spreadsheet, no further checking of this function was conducted. Note that the metric units are rounded to the nearest meter, as there is not believed to be any geological significance to the decimals.

The second routine calculation made for use in relating Rustler halite in potash drillholes is that the formula in Excel 97 to convert English units (ft) to metric units for the depth to the base of the Culebra and to first reported salt. A table (Appendix B) is included showing 17 conversions with non-zero numbers verified (rounded to eliminate decimals). Some data were available in metric units and were directly used.

For location data, it was desired to use UTM coordinates for drillholes and other features. A large number of the drillholes had locations in NM State Plane (NAD27) coordinates provided by Dave Hughes (Westinghouse). These were accepted as given. Equivalent locations were not available for the potash data acquired for this project. The drillholes were plotted on 7.5 minute quadrangle maps using standard township-range-section coordinates, and the NM State Plane Coordinates were then read from the map. These locations were 100% checked, and the methods modified when early checks revealed about 10% location errors. Twenty records were selected using the random number generator in Excel 97 for spot checking (Appendix A). The locations were rechecked and the State Plane coordinates were read without knowledge of the previous coordinates. All checked within ± 50 ft, which is about best accuracy to be expected using maps and an engineer's scale. As these geological data are not particularly sensitive to that variation, it

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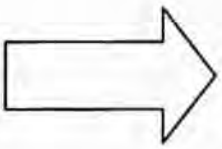
was deemed acceptable. Some later location data were read as UTM (NAD27) coordinates from the maps. All State Plane coordinates were converted to UTM (NAD27) coordinates using *Corpscon for Windows 5.11.08*. To verify the conversion of State Plane to UTM coordinates, four locations in State Plane (NAD27) coordinates (left hand column below) were converted to UTM (NAD27) coordinates (right hand column below). These four locations are within the study area for Task 1. Within the limits of reading the map using an engineer's scale, these coordinates match. The coordinates checked were:

Horizontal Datum: State Plane, NAD 27
(located on quadrangle maps)

State Plane	X	Y
CHECK1	650000	510000
CHECK2	650000	490000
CHECK3	670000	540000
CHECK4	630000	510000



Horizontal Datum: UTM, NAD27
Horizontal Zone: 13
Horizontal Units: Meters

UTM	X	Y
CHECK1	608404.72683	3585298.74965
CHECK2	608442.70416	3579204.01345
CHECK3	614442.41641	3594478.94431
CHECK4	602310.01957	3585260.74438

Corpscon is a standard tool for converting between these coordinate systems. Older WIPP drillholes are generally located according to coordinates provided by Gonzales (1989). A test was performed (Appendix C) using Gonzales (1989) coordinates. Conversions are generally within a few meters, which is again sufficient for this task. Determining the reason for the differences from Gonzales (1989) is beyond the scope of this task.

Personnel

Dennis W. Powers did the geological interpretation and map construction. Chris Mahoney (B.A., M.Ed.) assisted with data management and some quality checks of data transcription and calculations. Mahoney is employed as Technical Associate to Powers.

References Cited

Beauheim, R.L., and Holt, R.M., 1990, Hydrogeology of the WIPP site, *in* Powers, D.W., et al., eds., Geological and Hydrological Studies of Evaporites in the Northern Delaware Basin for the Waste Isolation Pilot Plant (WIPP, New Mexico: GSA Field Trip #14, Geological Society of America (Dallas Geological Society), p. 131-179.

Gonzales, M.M., 1989, Compilation and comparison of test-hole location surveys in the vicinity of the Waste Isolation Pilot Plant site: SAND88-1065, Sandia National Laboratories, Albuquerque, NM.

Holt, R.M., and Powers, D.W., 1988, Facies variability and post-depositional alteration within the Rustler Formation in the vicinity of the Waste Isolation Pilot Plant, southeastern New Mexico: WIPP-DOE- 88-004, Department of Energy, Carlsbad, NM, 88221.

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Richey, S.F., 1989, Geologic and hydrologic data for the Rustler Formation near the Waste Isolation Pilot Plant, southeastern New Mexic: Open-file Report 89-32, US Geological Survey, Albuquerque, NM.

Snyder, R.P., 1985, Dissolution of halite and gypsum, and hydration of anhydrite to gypsum, Rustler Formation, in the vicinity of the Waste Isolation Pilot Plant, southeastern New Mexico: Open-file Report 85-229, US Geological Survey, Denver, CO.

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
215	NF-23-F	20	32	27	1000s	2640w	617001.49	3600704.27
216	D-159	21	30	11	1220n	100w	607180.03	3595972.53
217	U-75	21	30	15	450s	690w	605836.44	3593236.64
218	MPE-186	21	30	23	1498s	285e	608737.43	3593026.21
219	MPE-185	21	30	26	346s	2505e	608078.14	3590020.31
220	MPE-179	21	30	27	645n	2486e	606477.80	3591305.50
221	MPE-179-A	21	30	27	645n	2480e	606479.63	3591305.51
222	MPE-183	21	31	35	183s	136w	616948.92	3588391.94
223	K-140	21	32	6	3568n	2777w	620852.16	3597764.64
224	IMCC Water Test #3	22	29	12	1764n	1959w	599773.33	3586089.68
225	IMCC Water Test #2	22	29	12	1386n	2310w	599789.98	3586204.98
226	IMCC Water Test #1	22	29	12	1070n	2604w	599878.97	3586301.83
227	I-323	22	30	4	1324s	1518e	605117.70	3587061.02
228	U-97	22	30	9	301s	305w	606497.71	3580246.64
229	D-250	22	30	35	2700s	2450e	608227.73	3579469.33
230	U-30	20	31	14	2140s	500w	608446.71	3604178.19
232	U-75-A	21	30	15	450s	700w	605833.39	3593236.62
307	K-118	21	31	8	1320s	1320w	613359.54	3605595.59
311	K-119	21	31	8	1320s	1320e	613196.41	3595141.61
398	K-113	20	32	35	50s	1100e	619138.74	3598851.04
400	K-112	20	32	35	100s	1500w	618315.84	3598861.13
452	Wills-10-A (W-10A)	21	30	1	1116s	827e	610123.89	3596707.10
453	Wills 10	21	30	1	1116s	817e	610126.93	3596707.12
454	D-131	21	30	1	2985n	1411w	609172.24	3597813.48
455	U-126	21	30	2	180s	2459w	607916.26	3596419.02
456	U-144	21	30	2	995.6n	2477.8w	607911.25	3598437.95
457	US Potash (U-0)	21	30	2	2691s	250w	607233.45	3597176.62
458	D-157	21	30	3	745s	1549w	606025.94	3596559.57
459	U-91	21	30	3	4242n	1080w	605891.19	3597396.79
460	Wills #13 (W-13)	21	30	3	979s	2434e	606429.14	3596653.52
461	Wills-9 (W-09)	21	30	3	3918n	1017e	606842.77	3597517.02
462	Wills 14 (W-14)	21	30	3	1259n	1331e	606723.40	3598331.47
500	D-158	21	30	10	1776s	1935w	606148.22	3595280.40
501	Wills 12 (W-12)	21	30	10	2170n	1457e	606717.12	3595680.13
502	US Potash #1 Aray McNutt J (U-S)	21	30	10	2340.82s	150w	605606.27	3595444.62

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
503	FC-62	21	30	10	707s	707e	606957.82	3594957.86
504	D-112	21	30	10	1083n	810w	605800.91	3595994.38
505	Wills 11	21	30	11	2595s	1940e	608188.43	3595536.95
507	D-152	21	30	11	1261s	1417w	607604.29	3595137.13
508	D-156	21	30	11	1237n	1268w	607553.29	3595982.48
510	U-63	21	30	13	2960n	340w	608915.23	3593834.90
523	K-159	21	30	13	1200s	200e	602297.18	3593420.23
550	FC-80	21	30	24	580n	470e	610307.06	3592997.92
551	Crosby #1 (RC-01)	21	30	25	1098s	969w	609135.67	3590255.48
552	Crosby #2 (RC-02)	21	30	26	983n	1364w	607651.61	3591221.41
583	I-123	21	30	34	1320n	2640w	606443.41	3589492.04
584	K-109	21	31	1	500n	500e	619840.65	3598695.43
585	K-138	21	31	1	5351n	50e	619994.69	3597210.72
586	K-137	21	31	1	3650n	25e	619999.17	3597713.59
588	K-133	21	31	1	1320n	1320w	618790.96	3598422.21
589	NF-51-F	21	31	2	2640s	2640w	617610.09	3597195.81
590	FC-58	21	31	2	3500n	700w	617004.99	3597710.10
591	K-107	21	31	2	750n	2050w	617426.10	3598596.52
592	NMP-163	21	31	21	50s	2600w	617607.57	3596380.58
593	K-111	21	31	2	4000n	100e	618338.90	3597611.78
594	K-102	21	31	3	4040s	1350e	616396.03	3597622.49
595	NF-50-F	21	31	3	2550s	2640w	615995.30	3597132.38
596	K-100	21	31	3	0s	2540e	616045.82	3596363.19
597	K-101	21	31	3	2640s	50e	616787.39	3597175.42
598	FC-57	21	31	3	2600n	2640w	615989.82	3598008.50
599	FC-55	21	31	3	3960s	50w	615192.54	3597576.86
600	K-99	21	31	3	2100s	900w	615501.00	3596984.53
601	K-103	21	31	3	1600n	350e	616703.96	3598332.96
602	FC-64	21	31	4	680s	2560e	614401.51	3598583.69
603	FC-54	21	31	4	50s	2640w	614400.13	3596368.14
604	FC-83	21	31	4	1500s	700e	614976.33	3596821.25
605	FC-85	21	31	4	1317s	1302w	613971.07	3596754.01
606	NF-49-F	21	31	4	2642s	2640w	614372.51	3597129.85
607	FC-64-A	21	31	4	700s	2560e	614401.55	3598577.60
608	NF-53-F	21	31	4	2640n	2643w	614344.27	3597990.59

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
609	FC-74	21	31	4	1026s	2549e	614413.46	3596672.97
610	NF-22-F	21	31	5	875s	350w	612082.54	3596605.07
611	FC-87	21	31	5	2010s	755e	613345.06	3596955.81
612	NF-21-F	21	31	5	3960s	300e	613463.34	3597535.57
613	NF-41-F	21	31	5	100n	60e	613501.52	3598739.58
614	NF-19-F	21	31	5	100s	100w	612007.93	3596353.18
615	FC-60	21	31	5	2600n	2625w	612752.10	3597965.39
616	FC-56	21	31	5	1980s	2640w	612766.16	3596936.95
617	NF-8-F	21	31	5	100s	100e	613561.95	3596385.75
618	NF-03-F	21	31	5	125n	2639e	612716.82	3598734.67
619	FC-90	21	31	5	1102s	1642e	613087.75	3596679.92
620	NF-24-F	21	31	5	3960n	1000w	612259.48	3597550.90
623	NF-48-F	21	31	6	3960n	1500e	611497.63	3597546.13
624	NF-37-F	21	31	7	2641s	100e	611952.32	3595499.53
625	NF-39-F	21	31	7	2641s	2640e	611175.23	3595494.67
626	K-117	21	31	7	1320s	1320e	611596.68	3595108.75
627	K-115	21	31	7	1320n	1320e	611591.77	3595893.45
628	FC-88	21	31	8	1375n	1395e	613153.42	3595926.07
629	NF-30-F	21	31	8	2640n	2640e	612805.54	3595512.48
630	FC-89	21	31	8	200n	2600e	612785.63	3596259.00
631	K-116	21	31	8	1320n	1320w	612391.81	3595883.22
632	NF-35-F	21	31	8	238s	238w	612078.64	3594791.78
633	FC-61	21	31	9	50s	2642w	614410.04	3594783.49
634	FC-86	21	31	9	968n	1676w	614105.01	3596046.30
635	K-95	21	31	9	1260s	1000e	614903.05	3595137.04
636	FC-84	21	31	9	558n	1241e	614812.63	3596195.49
637	NF-32-F	21	31	9	1983n	330w	613703.18	3595731.42
638	NF-31-F	21	31	9	2000n	2000e	614586.93	3595736.95
640	NF-44-F	21	31	10	2640s	2640w	616020.30	3595570.68
641	NF-42-F	21	31	10	330n	320w	615299.83	3596259.48
642	K-94	21	31	10	2240n	0w	615204.31	3595695.09
643	NF-38-F	21	31	10	228s	2644e	616002.02	3594839.16
645	FC-59	21	31	11	300n	300w	616899.67	3596277.11
646	K-139	21	31	12	800n	600w	618614.60	3596165.93
649	NMP-153 (K-153)	21	31	13	70s	70e	620027.17	3593233.88

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
650	FC-72	21	31	14	2640s	2640w	617668.33	3593973.41
651	FC-71	21	31	14	141n	141w	617465.63	3594711.17
652	FC-67	21	31	14	141s	141w	616873.29	3593183.70
653	FC-73	21	31	14	141s	141e	618396.85	3593216.08
656	NF-36-F	21	31	15	2590n	2642e	615984.88	3593924.79
657	NF-33-A	21	31	15	70n	528w	615408.39	3594736.40
660	NF-46-F	21	31	16	2640n	2640e	614384.94	3593922.41
661	FC-75	21	31	16	250s	250w	613673.52	3593163.71
662	KP-96	21	31	16	1300n	1000e	614908.10	3594329.48
663	KP-97	21	31	16	1400s	500e	615080.46	3593568.68
664	NF-45-F	21	31	17	318n	84e	613588.10	3594641.22
665	FC-77	21	31	17	2600s	2600e	612830.82	3593905.08
666	NMP-161	21	31	18	2500s	2500e	611368.36	3593850.23
667	NMP-160 (K-160)	21	31	18	1700n	1300w	610817.93	3594151.54
668	FC-79	21	31	19	2400s	2400e	611302.41	3592211.79
669	NMP-165	21	31	20	20s	2640e	612853.39	3591512.93
670	FC-78	21	31	20	2450s	2450e	612879.29	3592244.49
671	NMP-166	21	31	20	50s	50w	612053.45	3591507.93
673	K-98	21	31	21	160n	2282e	614542.69	3593062.48
674	FC-76	21	31	21	2640n	2626w	614440.75	3592307.58
676	NMP-164	21	31	21	50s	50w	613668.47	3591533.26
677	NFU-40-F	21	31	22	200n	668w	615449.39	3593052.90
678	NF-43-F	21	31	22	2640n	2640w	616078.91	3592287.34
682	NMP-156 (K-156)	21	31	23	250s	250e	618391.37	3591654.18
683	NMP-155 (K-155)	21	31	24	1700s	70e	620042.60	3591984.49
684	KP-93	21	31	24	2740n	200w	618524.08	3592363.56
685	NMP-154 (K-154)	21	31	24	1800n	2500e	619284.17	3592650.21
686	NMP-157 (K-157)	21	31	26	500s	2000w	617479.23	3590094.24
688	NMP-167	21	31	27	2630n	2650e	616065.81	3590725.40
689	FC-66	21	31	27	300n	200w	615284.25	3591436.69
690	NMP-168	21	31	28	2640n	2640e	614458.45	3590692.51
691	USP-135	21	31	28	300s	600w	613868.30	3590033.61
692	NMP-170	21	31	29	2640n	20e	613650.75	3590710.32
693	NMP-169	21	31	29	2640s	2640e	612850.81	3590705.33
694	Wills-8 (W-8)	21	31	30	2667s	206w	610504.32	3590690.67

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
695	Wills-7	21	31	31	264n	471w	610601.36	3589792.27
696	FC-63	21	31	32	300n	2540w	612841.19	3589806.25
697	FC-68	21	31	32	141s	141e	613657.87	3588348.54
698	FC-65	21	31	34	100s	100w	615318.90	3588328.43
699	NF-52-F	21	31	34	250n	2208e	616200.75	3589857.70
700	FC-69	21	31	34	141n	150w	615316.96	3589859.80
702	D-96	22	30	3	693n	977e	606924.60	3588077.96
703	U-168	22	30	3	1320s	300e	607144.09	3587088.90
704	Gypsy #3 (GO-03)	22	30	4	150n	400e	605460.96	3588213.59
707	U-167	22	30	4	1320s	200e	605551.99	3587056.11
737	NM Potash #1 / Lomasson 1 (I-A)	22	30	6	1998.1s	2193.3w	601931.79	3587269.71
741	NM Potash #3A / Lommasson Test	22	30	6	3413s	4645w	602073.88	3587697.24
742	NM Potash #2/Lommasson #2 (I-B)	22	30	6	3311.4s	2561.7w	601441.75	3587662.82
755	Gypsy Oil #4 (GO-04)	22	30	8	756s	756w	602568.95	3585277.60
764	U-163-S	22	30	9	1320n	2640w	604756.81	3586289.29
766	U-97-A	22	30	9	315s	291w	604070.53	3585165.06
767	I-322	22	30	9	2406n	578w	604103.87	3585927.14
769	I-326	22	30	9	215n	783w	604198.63	3586613.41
770	D-82	22	30	10	1883n	2574e	606457.00	3586094.19
771	D-121	22	30	11	1247s	1302w	607641.89	3585453.99
773	D-120	22	30	13	1562n	1565w	609361.35	3584611.41
774	D-48	22	30	14	134s	2039e	608263.43	3583522.71
783	I-147	22	30	20	1320s	1320e	603578.44	3582218.14
784	NM Potash & Chemical #1 (I-D)	22	30	20	754.5n	1568.9w	602734.33	3583191.12
785	IMCC #145 (I-145)	22	30	20	1320n	1320e	603588.53	3583044.07
786	IMCC # 143 (I-143)	22	30	20	1320n	1320w	602758.13	3583038.89
787	I-114	22	30	20	1320s	1320w	602786.21	3582201.02
788	D-33	22	30	21	109s	81e	605622.33	3581883.47
789	I-111	22	30	21	1320n	2640e	604815.19	3583036.48
790	I-112	22	30	21	1320s	1320w	604431.59	3582241.74
791	D-263	22	30	22	2563n	272e	607186.74	3582693.18
792	D-264	22	30	22	2585n	2551e	606500.09	3582848.89
794	D-259	22	30	23	1873s	1144e	608544.29	3582465.46
795	D-261	22	30	23	407n	1513w	607731.18	3583351.78
796	D-262	22	30	23	213n	70w	607288.84	3583425.21

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
797	D-202	22	30	23	1289.12s	1202.48w	607623.88	3582231.16
798	D-260	22	30	23	1093n	789e	608654.20	3583167.06
799	D-255	22	30	23	104s	1303e	608502.19	3581886.17
800	D-258	22	30	23	1508n	2677e	608083.76	3583011.13
802	D-104	22	30	24	2585n	1394e	610096.93	3582718.93
806	D-235	22	30	25	2878s	789w	609154.21	3581174.07
807	D-203	22	30	26	2650s	1276.3e	608537.88	3581048.34
808	D-254	22	30	26	300n	2100w	607939.18	3581760.76
809	D-233	22	30	26	4810s	13w	607299.24	3581756.78
810	D-234	22	30	26	188s	4712w	608740.51	3580318.20
811	D-200	22	30	27	540s	20w	605692.30	3580436.35
812	D-198	22	30	27	38s	2643w	606493.42	3580250.87
813	D-181	22	30	27	2664s	2625e	606526.33	3581081.52
814	D-231	22	30	27	2370s	224e	607243.03	3580994.56
815	D-232	22	30	27	1326s	1366w	606102.36	3580652.23
816	D-224	22	30	28	1377n	1390e	605228.98	3581431.51
817	D-219	22	30	28	1221s	1237e	605310.33	3580601.58
818	D-216	22	30	28	1199.5s	1421.1w	604472.41	3580581.13
819	D-185	22	30	28	2593n	16e	605688.50	3581045.82
820	D-167	22	30	28	2447s	2652e	604881.43	3580964.61
821	D-225	22	30	28	1822n	1351w	604468.23	3581251.55
822	D-278	22	30	28	1200s	100w	604076.25	3580578.66
850	D-199	22	30	33	2477n	2539e	604905.87	3579486.74
851	D-218	22	30	33	1246n	1441e	605238.90	3579839.27
852	D-196	22	30	33	3077n	2540e	604937.48	3579304.09
853	D-221	22	30	33	1351s	1331e	605335.34	3579032.29
854	D-195	22	30	33	2777.16n	2539.67e	604967.29	3579410.93
855	D-194	22	30	33	270.6n	1464.9e	605267.19	3580189.91
856	D-217	22	30	33	1294n	1321w	604477.15	3579819.29
857	D-170	22	30	33	2698.76n	2543.21e	604936.72	3579425.98
858	D-38	22	30	33	97n	2551w	604855.79	3580187.34
859	D-168	22	30	33	178.5n	243.5e	605632.96	3580176.95
860	D-169	22	30	33	21.8n	69.7w	604078.72	3580182.51
861	D-228	22	30	33	1777s	2504w	604846.87	3579174.01
862	D-226	22	30	33	2591s	1302w	604510.19	3579408.09

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
863	D-180	22	30	34	2944n	2681e	606521.92	3579344.43
864	D-188	22	30	34	2621n	67w	605744.08	3579461.48
865	D-230	22	30	34	1505n	2672w	606072.08	3580621.57
866	D-36	22	30	34	280n	325e	607217.78	3580156.34
867	USGS 3 (GS 3)	22	30	34	252s	247w	605809.68	3578715.26
868	D-229	22	30	34	618n	1334w	606121.25	3580065.71
870	D-250-A	22	30	35	2810s	2503e	608211.37	3579502.75
871	D-249	22	30	35	2627n	306w	607427.98	3579433.88
873	D-160-S	22	30	36	2464s	1117w	609279.50	3579407.31
907	D-227	23	30	3	1278n	1184w	606094.59	3578229.44
1072	Pan American Petroleum Corp., Big E	20	31	7	1650s	660e	603066.40	3605637.74
1095	Perry R. Bass, Big Eddy Unit #61	21	29	15	1980s	1980w	596399.33	3593637.23
1096	Pan American Petroleum Corp., Big E	21	29	18	1980s	1980e	591980.83	3593594.69
1097	Perry R. Bass, Big Eddy Unit No. 40	21	29	22	1980n	1980e	596809.71	3592434.84
1098	Bass Enterprises Prod. Co., Big Eddy	21	29	34	660n	1980w	596431.38	3589626.40
1099	WIPP 27	21	30	21	90n	1485w	604426.00	3593079.00
1103	WIPP 30	21	31	33	668n	177w	613721.35	3589701.00
1104	ERDA 6	21	31	35	2152s	910e	618218.64	3589007.84
1105	Phillips Petroleum Company, ETZ Fe	21	32	1	3255n	1972e	629086.93	3597968.53
1106	Kimball Production Company, Feder	21	32	1	660s	1980w	628706.00	3596747.11
1107	Phillips Petroleum Company, Hat Me	21	32	2	660s	1980e	627502.35	3596724.35
1108	Amini Oil Company, Pubco Federal #	21	32	2	3300n	660w	626664.48	3597907.66
1109	Amini Oil Company, New Mexico Fe	21	32	4	1683n	1650w	623751.31	3598346.57
1110	Holly Energy, Inc., Salt Lake Deep N	21	32	6	2189n	500e	621489.55	3598180.05
1111	The Superior Oil Company, Governm	21	32	10	1980n	1980e	625922.63	3595922.10
1112	Gackle Drilling Company, Federal #1	21	32	11	660s	660e	627938.90	3595142.34
1113	Phillips Petroleum Company, Hat Me	21	32	11	660s	1980w	627116.09	3595137.20
1114	Phillips Petroleum Company, Hat Me	21	32	11	1980n	1980e	627507.30	3595932.01
1116	Gulf Oil Corporation, San Simon #1	21	32	26	1980n	660e	627948.70	3591134.83
1137	WIPP 32	22	29	33	1673s	29e	595902.58	3579080.22
1138	WIPP 29	22	29	34	407s	1828e	596981.00	3578694.00
1142	WIPP 33	22	30	13	1762s	2427w	609625.88	3584023.37
1143	WIPP 25	22	30	15	1853s	2838e	606385.00	3584028.00
1144	P-14	22	30	24	312s	613w	609084.00	3581976.00
1145	P-12	22	30	24	167n	195e	610455.63	3583451.35

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1147	WIPP 26	22	30	29	2232n	12e	604014.00	3581162.00
1149	DOE 2	22	31	8	704s	128e	613683.00	3585294.00
1150	WIPP 11	22	31	9	712n	294w	613791.46	3586475.46
1151	WIPP 34	22	31	9	202s	2000w	614332.77	3585145.25
1152	WIPP 14	22	31	9	99s	2112e	613079.59	3585102.39
1153	AEC 8	22	31	11	935n	1979w	617525.18	3586442.68
1154	P-20	22	31	14	794s	103e	618531.10	3583767.12
1155	Fenix & Scisson, WIPP HYDRO H-5	22	31	15	1007n	134e	616903.00	3584802.00
1156	P-21	22	31	15	852n	150e	616898.49	3584849.18
1158	Fenix & Scisson, WIPP #13	22	31	17	2566s	1731w	612644.00	3584247.00
1159	WIPP 12	22	31	17	148s	84e	613710.00	3583524.00
1160	P-5	22	31	17	202s	165e	613683.60	3583539.73
1161	P-13	22	31	18	125n	116w	610531.49	3585019.15
1162	Fenix and Scisson, Inc., WIPP H-6c	22	31	18	281n	375w	610610.00	3584983.00
1163	P-3	22	31	20	103s	3122e	612799.39	3581896.79
1164	Fenix & Scisson, Inc., WIPP #18	22	31	20	4306s	50e	613735.00	3583179.00
1165	Fenix & Scisson, Inc., WIPP #22	22	31	20	2547s	50e	613739.00	3582653.00
1166	Fenix & Scisson, Inc., WIPP #21	22	31	20	1451s	10e	613743.00	3582319.00
1167	Fenix & Scisson, Inc., WIPP #19	22	31	20	2986s	50e	613739.00	3582782.00
1168	ERDA 9	22	31	20	267s	177e	613696.00	3581958.00
1169	P-11	22	31	23	175n	177w	617015.36	3583457.19
1170	P-19	22	31	23	1652s	2330w	617680.09	3582419.38
1172	P-18	22	31	26	134s	797e	618367.00	3580350.00
1173	P-10	22	31	26	2315n	339w	617088.22	3581203.08
1174	P-4	22	31	28	146s	1487e	614935.18	3580317.47
1175	DOE-1	22	31	28	182s	608e	615203.00	3580333.00
1176	P-2	22	31	28	125n	172e	615316.33	3581848.17
1177	H-1	22	31	29	623n	1083e	613423.00	3581684.00
1178	Department of Energy, H-14	22	31	29	372s	562w	612341.00	3580354.00
1179	ERDA, Hydrological H-2c	22	31	29	770n	3584e	612666.00	3581668.00
1180	Sandia National Laboratories, Hydrol	22	31	29	3200n	140e	613727.81	3580894.77
1181	P-1	22	31	29	327s	551w	612337.64	3580340.91
1182	P-6	22	31	30	2767s	199w	610608.19	3581073.42
1183	P-15	22	31	31	398s	184w	610624.00	3578747.00
1184	H-11b3	22	31	33	1502s	105e	615344.84	3579130.27

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1185	P-9	22	31	33	1493s	143e	615354.32	3579124.84
1226	Mesa Petroleum Company, Nash Unit	23	29	12	1980s	1980w	599780.63	3575964.59
1227	Mesa Petroleum, Nash Unit #5	23	29	13	2310s	330e	600711.32	3574446.35
1228	Mesa Petroleum Company, Nash Unit	23	29	13	990n	330e	600702.65	3575056.09
1229	Mesa Petroleum Company, Nash Unit	23	29	13	1980n	660e	600606.40	3574754.70
1230	Fenix & Scisson, Inc., WIPP H-7c	23	30	14	2595n	2471w	608095.00	3574640.00
1231	Skelly Oil Company, Forty-Niner Rdi	23	30	16	1980s	1980e	605112.94	3574370.11
1232	Mesa Petroleum Company, Nash Unit	23	30	18	1980n	330w	600908.10	3574754.45
1234	Skelly Oil Company, Forty Niner Rid	23	30	21	1980n	1980e	605129.28	3573163.41
1236	ERDA 10	23	30	34	200n	2327e	606685.94	3570513.86
1237	Atomic Energy Commission, U.S.G.S.	23	30	34	2640n	2640w	606462.00	3569459.00
1239	P-17	23	31	4	1351s	395w	613926.00	3577466.00
1240	P-8	23	31	4	642n	96w	613830.40	3578466.84
1241	Fenix & Scisson, WIPP No. H-4C	23	31	5	447n	719w	612406.00	3578499.00
1242	P-7	23	31	5	513n	396w	612308.95	3578341.26
1243	MP Grace Cabin Baby Federal No. 1	23	31	5	1980n	1980e	613191.00	3578048.49
1244	P-16	23	31	5	951s	1629w	612694.71	3577321.83
1246	Texas American Oil Corp., Todd Fed	23	31	14	1980s	1980w	617668.93	3574470.44
1247	H-12	23	31	15	23n	92e	617023.00	3575452.00
1248	El Paso Natural Gas Company, Arco	23	31	16	1980s	1980w	614448.55	3574431.21
1249	Patoil Corporation, Muse Federal #1	23	31	21	660s	660e	615273.78	3572427.72
1250	Texas American Oil Corporation, Tod	23	31	23	1980s	1800e	618137.32	3572855.72
1251	Texas American Oil Corp., Todd 23 F	23	31	23	660s	1650e	618188.88	3572453.77
1252	Skelly Oil Company, Todd 25 Federal	23	31	25	1980n	1970w	619302.50	3571662.54
1253	Texas American Oil Corp., Todd Fed	23	31	26	1980n	1650e	618199.37	3571649.28
1254	Texas American Oil Corp., Todd Fed	23	31	26	1980n	1980e	618098.81	3571648.66
1255	Texas American Oil Corporation, Tod	23	31	26	660n	1980e	618093.56	3572050.90
1256	Patoil Corporation, Wright-Federal #1	23	31	27	1980s	660w	615691.15	3571224.11
1257	El Paso Natural Gas Company, Mobil	23	31	29	1980s	1980e	613280.74	3571197.55
1258	J.A. Leonard, Continental State No. 1	23	31	32	660n	660w	612477.61	3570381.31
1259	Patoil Corporation, Wright-Federal #2	23	31	33	1980n	660w	614097.28	3570001.29
1260	Charles P. Miller, Pauley Harrison Sta	23	31	36	660s	660w	618937.42	3569256.37
1263	Hill & Meeker & Ambass. Oil Corp.,	23	32	11	1980n	1980e	627748.11	3576624.98
1264	John H. Trigg, Federal Continental 1-	23	32	15	1980n	1980e	626165.31	3574991.99
1265	Skelly Oil Company, Federal Sand 18-	23	32	18	1980n	660e	621741.93	3574917.55

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1266	Kirklin Drilling Company, Federal Es	23	32	20	660s	1980e	622974.92	3572523.44
1267	Fenix & Scisson, Inc., WIPP No. H-1	23	32	20	381s	1978e	622975.74	3572441.47
1268	Curtis Hankamer, Gulf-Federal A-A #	23	32	21	660n	1980e	624575.05	3573773.14
1269	H.L. Johnston, Sr., Conoco-Fields-Fe	23	32	24	1650s	330e	629920.17	3572943.60
1270	Continental Oil Company, Fields Fed	23	32	24	660s	660e	629824.53	3572639.46
1271	Continental Oil Company, Fields No.	23	32	25	990s	330w	628520.31	3571096.60
1272	H.L. Johnston, Sr., Wehrli-Federal #1	23	32	25	990n	2310w	629110.67	3572119.38
1273	John H. Trigg, Federal WL #3-26	23	32	26	330s	330e	628334.08	3570855.59
1274	P.M. Drilling Company, Federal Jame	23	32	26	1980s	330e	628315.49	3571393.99
1275	P.M. Drilling Company, Federal Field	23	32	26	660s	1980w	627418.14	3570975.77
1276	John H. Trigg Company, No. 4-26 Fe	23	32	26	330s	1650e	627919.73	3570884.10
1277	Max Wilson, Continental Federal No.	23	32	28	660n	1980w	624187.20	3572137.54
1278	Curtis Hankamer, Hankamer No.1 Co	23	32	31	660s	660w	620572.56	3569283.60
1279	Curtis Hankamer, Holder Federal #1	23	32	33	1980n	660e	625016.98	3570138.61
1280	The Pure Oil Company, Federal K No	23	32	34	1980s	330e	626729.32	3569760.38
1281	PM Drilling Company, Federal James	23	32	35	1980s	1980e	627834.57	3569777.61
1282	John H. Trigg, Federal WL 1-35	23	32	35	1650n	2310e	627726.94	3570277.05
1283	P.M. Drilling Company, Federal-Jame	23	32	35	660n	660e	628225.42	3570587.65
1284	P-M Drilling Company, Payne No. 2	23	32	35	990n	2310w	627524.57	3570474.80
1285	John H. Trigg, Federal WL No. 2-35	23	32	35	1650n	990e	628131.69	3570321.01
1286	P.M. Drilling Company, Payne Federa	23	32	35	1980n	660w	627025.78	3570164.20
1287	P-M Drilling Company, Federal-Payn	23	32	35	2310n	2310w	627529.81	3570072.55
1288	P.M. Drilling Co., Federal James No.	23	32	35	660n	1980e	627823.18	3570580.58
1289	P.M. Drilling Company, Federal Payn	23	32	35	1980s	330w	626930.45	3569762.85
1290	Penroc Oil Corporation, Triste State #	23	32	36	330n	330w	628525.86	3570694.35
1291	The Pure Oil Company, Brinninstool	23	32	36	1980s	1980e	629457.16	3569816.95
1292	David Fasken, Gulf State #1	23	32	36	1980n	660w	628633.19	3570193.99
1296	P-M Oil Company, Texaco State No.	23	33	17	660s	660w	631787.74	3574265.07
1297	Helbing & Podpechan, #1 A Shell Sta	23	33	18	660s	660w	630201.25	3574251.24
1298	Tenneco Oil Company, Skelly State #	23	33	18	660n	1980e	630962.61	3575465.56
1299	Continental Oil Company, Marshall #	23	33	19	660s	1980w	630578.22	3572637.14
1300	Continental Oil Company, I.J. Marsha	23	33	19	660s	660w	630226.77	3572646.23
1301	Continental Oil Company, Marshall #	23	33	19	1980s	625w	630209.34	3573048.41
1302	Continental Oil Company, Marshall #	23	33	19	1980s	1910w	630601.24	3573051.76
1303	American Quasar, Brinninstool #1	23	33	20	1980n	1980e	632607.92	3573470.17

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1304	Continental Oil Company, Levick Fed	23	33	20	660s	660e	633020.35	3572671.83
1305	Kirklin Drilling Company, Lea State #	23	33	31	660n	660e	631438.42	3570648.14
1306	El Cinco Production Co., Ltd., Humb	23	33	32	660n	1980e	632646.73	3570658.39
1307	George L. Buckles Company, State 1-	23	33	35	660s	660w	636679.17	3569506.46
1323	Chase Petroleum Company, Valley #1	24	29	5	1650s	660w	593013.88	3567717.63
1324	El Capitan Oil Company, Federal Rei	24	29	6	330s	2310e	592115.88	3567312.24
1325	Southern California Petrol. Corp., Fed	24	29	7	2310s	2310e	592130.74	3566292.97
1326	Southern California Petrol. Corp., Fed	24	29	7	2310n	2310e	592127.27	3566507.79
1327	Tennessee Production Comp., Valley	24	29	7	990s	330w	591325.71	3565884.80
1328	Tennessee Production Company, Vall	24	29	7	1650s	1650w	591726.70	3566089.03
1329	Skelly Oil Company, Cedar Canyon #	24	29	9	770s	770e	595817.53	3565847.46
1330	Skelly Oil Company, Cedar Canyon 9	24	29	9	660s	1980e	595449.32	3565811.35
1331	Skelly Oil Company, Cedar Canyon #	24	29	10	2180n	1980w	596645.85	3566579.41
1332	Penzoil United Incorporated, Mobil-F	24	29	27	660s	660w	596313.14	3560966.42
1333	Perry R. Bass, Poker Lake Unit #54	24	30	4	660s	1980e	605182.51	3567537.80
1334	Perry R. Bass, Poker Lake Unit #45	24	30	18	460n	660e	602338.83	3565539.61
1335	Fenix & Scisson, Inc., WIPP H No. 8	24	30	23	2062n	1466e	608664.72	3563535.52
1336	Hill & Meeker, Bass Federal #1-25	24	30	25	660s	660w	609335.31	3561152.88
1337	Ford Chapman & Associates, Federal-	24	30	29	660s	660e	604028.60	3561075.50
1338	Skelly Oil Company, Todd 2 State #1	24	31	2	1980n	1980w	617736.01	3568433.09
1339	Max Wilson, Jennings Federal No. 1	24	31	3	660s	660e	616939.92	3567611.71
1340	Jack L. McClellan, Jennings Federal N	24	31	3	660n	660w	615725.02	3568814.65
1341	Texaco, Incorporated, M.M. Stewart F	24	31	4	660n	660e	615322.77	3568810.01
1342	Fenix & Scisson, Inc., WIPP No. H-9	24	31	4	2482n	193w	613974.00	3568234.00
1343	Sundance Oil Company, Betty Federa	24	31	4	1659n	2310w	614621.36	3568495.12
1344	El Paso Natural Gas Company, Sunda	24	31	4	1980n	1980w	614522.33	3568394.85
1345	American Quasar, Dunes Unit Federa	24	31	6	1980n	1980w	611288.52	3568362.58
1346	Ambassador Oil Corporation, Federal	24	31	7	660s	660e	612152.23	3565948.22
1347	Gulf Oil Corporation, Federal Littlefi	24	31	11	660n	1980e	618145.80	3567222.41
1348	Coquina Oil Corporation, El Paso Fe	24	31	12	1980s	1980w	619362.13	3566427.54
1349	W.J. Weaver, Continental Federal #1	24	31	17	660n	660e	613761.26	3565564.77
1350	Charles B. Read, Ritchie Federal #1	24	31	18	660s	660e	612169.54	3564337.42
1351	Pauley Petroleum Incorporated, Jenni	24	31	20	660n	660e	613779.77	3563955.80
1352	David Fasken, Poker Lake #40	24	31	20	660s	1980w	612990.44	3562732.82
1353	Hill & Meeker, Carper Federal #1-21	24	31	21	660n	660e	615383.54	3563977.94

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1354	The Texas Company, T. Heflin-Feder	24	31	24	660s	1980e	619809.07	3562815.02
1355	Pan American Petroleum Corp., Poke	24	31	28	660s	660e	615416.29	3561154.62
1356	Texaco, Incorporated, Cotton Draw U	24	31	35	1980s	660w	617435.45	3559994.75
1357	Union Oil Co. of California, Union Fe	24	32	1	660s	1980e	629482.81	3567798.08
1358	Cabeen Exploration Corp., Continent	24	32	1	1980s	660w	628665.78	3568186.45
1359	Calco, Marathon State #1	24	32	2	1990n	1990w	627464.70	3568534.03
1360	P.M. Drilling Company, Ohio State N	24	32	2	1980n	660e	628256.19	3568577.65
1361	Curtis Hankamer, Bondurant Federal	24	32	6	660n	1980e	621410.10	3568878.60
1362	Gulf Oil Corporation, Federal Hanag	24	32	10	1980s	1980e	626270.20	3566546.61
1363	Continental Oil Company, Wimberly	24	32	11	660n	660e	628276.76	3567375.82
1364	Curtis Hankamer, Hanagan Federal N	24	32	11	660s	1980e	627887.80	3566161.38
1365	Gulf Oil Corporation, Federal Hanag	24	32	11	1980s	660e	628285.74	3566567.35
1366	Gulf Oil Corporation, Federal Hanag	24	32	11	1980s	1980e	627883.48	3566563.63
1367	Curtis Hankamer, Gulf Hanagan #1	24	32	11	660s	660e	628290.06	3566165.09
1368	Continental Oil Company, Wimberly	24	32	11	1980n	1980e	627878.84	3566968.02
1369	Continental Oil Company, Wimberly	24	32	12	660n	660e	629889.67	3567402.90
1370	Continental Oil Company, Wimberly	24	32	12	1980n	660e	629894.00	3567000.64
1371	Curtis Hankamer, Hanagan Federal N	24	32	12	1980n	660w	628683.32	3566979.72
1372	Westates Petroleum Corp. of Texas, W	24	32	13	660s	660e	629920.21	3564594.73
1373	Continental Oil Company, Wimberly	24	32	13	660n	1980e	629504.43	3565788.03
1374	Tenneco Oil Company, #1 USA Jenn	24	32	14	660n	1980w	627484.99	3565755.68
1375	Tenneco Oil Co., USA Jennings N.M.	24	32	14	882s	882w	627167.48	3564618.80
1376	Tenneco Oil Company, Jennings Fede	24	32	14	1980s	1650w	627396.38	3564958.19
1377	Tenneco Oil Co., USA Jennings N.M.	24	32	14	660n	1980e	627893.04	3565759.13
1378	Gulf Oil Corporation, Federal Hanag	24	32	15	660s	720e	626680.35	3564542.02
1379	Gulf Oil Corporation, Federal Hanag	24	32	15	1980s	660e	626692.48	3564944.38
1380	Tenneco Oil Company, Hicks-Federa	24	32	15	660s	1980w	625891.11	3564527.68
1381	Gulf Oil Corporation, Federal Hanag	24	32	15	660s	1980e	626296.40	3564535.07
1382	Charles B. Read, Bradley #1	24	32	22	1980s	1980e	626314.25	3563327.12
1383	Charles B. Read, Bradley #2	24	32	22	1980n	990e	626610.07	3563735.81
1384	Tenneco Oil Company, U.S. Smelting	24	32	22	1980n	660w	625499.36	3563716.12
1385	Tenneco Oil Company, U.S. Smelting	24	32	22	1980s	660e	626716.49	3563334.19
1386	Tenneco Oil Company, U.S Smelting	24	32	22	2310n	1650e	626410.49	3563631.87
1387	Tennessee Gas Transmission Co., US	24	32	22	660n	1980e	626302.55	3564132.83
1388	Tenneco Oil Company, U.S. Smelting	24	32	22	990s	330e	626821.66	3563034.35

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1389	Curtis Hankamer, Ernest Federal #1	24	32	23	1980n	660w	627112.89	3563740.45
1390	Charles B. Read, Bradley #3	24	32	23	660n	660e	628314.75	3564150.80
1391	Ralph E. Williamson, Wright Federal	24	32	27	660n	1980e	626325.03	3562522.63
1392	Union Oil of California, Paduca Fede	24	32	30	1980n	1980e	621491.56	3562037.05
1393	Texaco Incorporated, Cotton Draw U	24	32	33	660s	660e	625110.79	3559684.83
1394	Texaco, Incorporated, Cotton Draw U	24	32	34	1980s	1980w	625920.70	3560100.97
1395	Sid W. Richardson, Inc., Federal Delb	24	32	35	660s	660w	627127.77	3559718.66
1396	Continental Oil Company, Bell Lake U	24	33	1	660n	660e	639499.91	3569136.62
1397	Hondo Drilling Company, Gulf N.W.	24	33	6	1980s	660w	630282.35	3568213.55
1398	Hondo Drilling Company, Gulf State	24	33	6	660s	660w	630287.29	3567811.30
1399	Tom L. Ingram, State O #2	24	33	7	1980n	660w	630296.24	3567006.79
1400	Tom L. Ingram, State O #1	24	33	7	660n	660w	630291.92	3567409.05
1401	Tom L. Ingram, State P #1	24	33	7	330n	1750w	630622.84	3567514.42
1402	George W. Riley Incorporated, State #	24	33	7	660s	660e	631493.01	3566225.51
1403	David Fasken, Gulf State #7-2	24	33	7	2310n	2310w	630766.09	3566924.07
1404	Sunray Mid-Continent Oil Co., N.M.	24	33	8	660n	660w	631884.76	3567431.43
1405	Byard Bennett, Holland #1	24	33	13	1980n	660e	639546.80	3565510.84
1406	Tenneco Oil Company, State Lowe #	24	33	17	660s	660w	631918.68	3564617.80
1407	Robert B. Holt, Holly-State #1	24	33	17	660n	1980e	632705.01	3565837.75
1408	Continental Oil Company, State BB 2	24	33	20	660s	1980w	632342.20	3563011.29
1409	F.R. Jackson, State #1	24	33	22	1980n	660w	635146.88	3563851.54
1410	Tenneco Oil Company, Sunray State #	24	33	27	1980s	1980w	635576.87	3561842.17
1411	Tidewater Oil Company, State AP #1	24	33	29	660s	1980e	632768.45	3561407.24
1412	Kirklin Drilling Co., Inc., Continental	24	33	30	330n	330w	630241.38	3562684.97
1413	Albert Gackle Operator, Continental	24	33	31	1980s	660e	631570.69	3560186.57
1414	Gulf Oil Corp. & Kirklin Drilling, #1	24	33	36	660n	660e	639610.81	3561086.99
1425	J. Glen Bennett, Superior Federal #1-	25	29	3	660n	660e	597553.97	3558964.63
1427	Neil H. Wills, Superior Federal #1	25	29	8	660s	660e	594348.75	3556099.10
1428	Mobil Oil Corporation, Corral Draw U	25	29	14	1980s	1980w	598390.58	3554914.59
1429	J. Glen Bennett, Superior Federal 15	25	29	15	660s	660w	596376.11	3554489.81
1430	Mobil Oil Corporation, Corral Draw U	25	29	22	1580s	1980w	596795.76	3553156.41
1431	J. Glen Bennett, No. 1-26 Superior Fe	25	29	26	660s	660e	599257.76	3551288.02
1432	J. Glen Bennett, Superior Federal 1-27	25	29	27	660s	660w	596422.33	3551254.03
1433	Bell Petroleum Company, Federal #1	25	29	29	660n	1880w	593543.58	3552461.59
1434	Bell Petroleum Company, Cities Servi	25	29	30	660s	760e	592761.60	3551232.92

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1436	Pat Oil Corporation, R & B Federal #	25	30	4	1980n	1980w	604862.93	3558676.52
1437	J.M.C. Ritchie & Chambers & Kenne	25	30	4	660s	660w	604473.66	3557858.61
1438	Fred Pool Drilling Company, Superio	25	30	8	1980n	660e	604079.77	3557046.46
1445	Bass Enterprises, Poker Lake #44	25	30	10	2030n	2180e	606881.73	3557077.22
1448	J. Ray Stewart, Poker Lake #61	25	30	17	1980n	660w	602857.34	3555388.99
1449	Jubilee Energy Corporation, Poker La	25	30	17	330n	1650w	603153.74	3555899.75
1450	J. Ray Stewart, 66 Poker Lake Unit	25	30	17	1980s	330w	602761.20	3554969.37
1451	Perry R. Bass, Jennings-Federal No. 1	25	30	18	660n	1980e	602048.86	3555780.46
1453	Alamo Corporation, Poker Lake #12/	25	30	18	660s	1980e	602061.60	3554559.43
1455	J.R. Stewart, Poker-Lake Unit No. 65	25	30	19	660n	660e	602469.07	3554160.90
1456	Perry R. Bass, Continental-Federal #2	25	30	20	1980s	660w	602883.37	3553349.49
1457	Perry R. Bass, Continental Federal #1	25	30	20	660n	660w	602871.30	3554167.05
1459	Bass Enterprises Prod. Co., Poker Lal	25	30	25	660s	660w	609394.59	3551429.62
1460	Texaco Incorporated, Cotton Draw U	25	31	2	1980n	1980e	618241.97	3558792.31
1461	Alamo Corporation, Poker Lake Unit	25	31	28	660n	660w	614250.20	3552706.99
1463	Gold Metals & Santana Pet. Corp., #1	25	31	35	660s	660w	617526.39	3549929.93
1464	Texaco, Incorporated, Cotton Draw U	25	32	3	1650s	1980e	626333.81	3558401.15
1465	Texaco Incorporated, E.F. Ray NCT-	25	32	9	330s	330e	625249.56	3556372.07
1466	Texaco Incorporated, Cotton Draw U	25	32	9	1650s	330e	625242.50	3556774.31
1467	Tennessee Gas & Oil Company, Ray	25	32	10	660n	660w	625529.14	3557681.82
1468	Texaco Incorporated, Cotton Draw U	25	32	10	1980n	660w	625535.89	3557279.58
1469	Texaco Incorporated, Cotton Draw U	25	32	10	660n	1980w	625931.37	3557689.49
1470	Texaco Incorporated, Cotton Draw U	25	32	10	2080n	760w	625566.86	3557249.91
1472	Texaco Incorporated, Cotton Draw U	25	32	10	2145n	2310e	626249.25	3557242.86
1473	Texaco Incorporated, E.F. Ray Feder	25	32	10	1980n	1980w	625938.13	3557287.25
1474	Texaco Incorporated, E.F. Ray-Feder	25	32	10	660s	1980e	626361.80	3556490.19
1475	Texaco Incorporated, E.F. Ray Feder	25	32	10	660s	1980w	625951.64	3556483.69
1476	Texaco Incorporated, E.F. Ray-Feder	25	32	10	1980s	1980w	625944.88	3556885.93
1477	Tenneco Oil Company, Emily Flint R	25	32	10	1650s	660w	625544.17	3556779.22
1478	Westates Petroleum Corp. of Texas, (	25	32	11	660s	1980e	627979.92	3556512.10
1479	Patoil Company, Union Federal #1	25	32	13	660s	1980w	629210.62	3554923.39
1480	Joseph O'Neill Jr., Federal O #1	25	32	14	660s	660e	628406.14	3554909.88
1481	Joseph O'Neill, Federal O #2	25	32	14	1980s	660e	628400.00	3555312.12
1482	Hill & Meeker, Ora Hall-Federal 14 #	25	32	14	2310n	330w	627074.07	3555595.57
1483	Tennessee Gas Transmission, #1 US/	25	32	15	660s	660w	625562.08	3554871.56

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1484	Texaco Inc., G.E. Jordan Federal (NC	25	32	15	1980n	660w	625556.81	3555673.03
1485	Texaco Incorporated, G.E. Jordan Fe	25	32	15	1980s	1980w	625961.51	3555282.71
1486	Tennessee Gas & Oil Company, G.E.	25	32	15	660n	1980w	625956.26	3556081.44
1487	Texaco Inc., G.E. Jordan Federal (NC	25	32	15	660n	1980e	626366.42	3556087.94
1488	Texaco Inc., G.E. Jordan-Federal (NC	25	32	15	660n	660w	625554.36	3556020.44
1489	Tennessee Gas & Oil Company, G.E.	25	32	15	1980s	660w	625559.28	3555274.12
1490	Texaco Inc., G.E Jordan Federal (NC	25	32	15	1980n	1980e	626369.22	3555685.68
1491	Tennessee Gas Transmission Co., G.E	25	32	15	1980n	1980w	625959.05	3555679.18
1492	Texaco Incorporated, Cotton Draw U	25	32	15	2130s	2130e	626326.27	3555336.47
1493	Tennessee Gas & Oil Company, State	25	32	16	660s	1980w	624345.01	3554850.92
1494	Tennessee Gas Trans. Co., State E.L.	25	32	16	1980n	660e	625154.58	3555666.28
1495	Tenneco Oil Company, State Monsan	25	32	16	1650s	2310w	624442.18	3555154.45
1496	Tennessee Gas Transmission Co., Stat	25	32	16	1980s	660e	625157.05	3555266.45
1497	Tenneco Oil Company, State Monsan	25	32	16	1650s	1650e	624855.99	3555160.97
1499	Tennessee Gas & Oil Company, State	25	32	16	660n	660e	625151.78	3556068.54
1500	Tenneco Oil Company, State Monsan	25	32	16	330s	990w	624044.56	3554745.75
1501	Tenneco Oil Company, State E.L. Bra	25	32	16	2310n	2310w	624437.58	3555552.74
1502	Continental Oil Company, State Z 16	25	32	16	1980n	1980e	624752.34	3555658.91
1503	Tennessee Gas & Oil Company, State	25	32	16	660s	1980e	624757.61	3554857.74
1504	Tennessee Gas & Oil Company, Mon	25	32	16	660s	660e	625156.45	3554870.87
1505	Shoreline Exploration Comp., Contin	25	32	16	2080n	1650e	624853.09	3555630.28
1507	The Texas Company, Jack B. Shaw Fe	25	32	18	660n	1980e	621504.55	3556006.04
1508	Texaco Inc.(formerly PRBass), Cotton	25	32	20	1650s	330e	623668.38	3553532.02
1509	Texaco Incorporated, Cotton Draw U	25	32	21	990s	990e	625085.08	3553353.35
1510	Panther City Investment Co., Perry Fe	25	32	21	660s	660w	623976.80	3553235.26
1511	Panther City Investment Co., Perry Fe	25	32	21	1980s	660w	623967.91	3553637.49
1512	Panther City Investment, Inc., Perry F	25	32	21	1980n	1980w	624360.96	3554046.77
1513	Panther City Invest. Inc., Perry Feder	25	32	21	660n	1980w	624352.07	3554448.68
1514	Panther City Investment Co., Perry Fe	25	32	21	2310s	990e	625077.41	3553755.59
1515	Panther City Investment Co., Perry Fe	25	32	21	1980s	1980e	624777.57	3553650.42
1516	Tennessee Gas & Oil Company, #3 E	25	32	21	1980n	1980e	624770.20	3554053.26
1517	Panther City Investment Co., Perry Fe	25	32	21	660s	1980w	624379.04	3553241.71
1519	Texaco Inc.(formerly Panther), Cotton	25	32	21	990s	2310e	624682.84	3553347.21
1520	Tenneco Oil Company, E.H. Perry U	25	32	21	1980n	660w	623958.72	3554040.32
1521	Tennessee Gas & Oil Company, E.H.	25	32	21	660n	660w	623949.83	3554442.54

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1522	Panther City Investment Company, P	25	32	21	1980n	660e	625172.44	3554059.71
1523	Tennessee Gas Transmission Co., E.H	25	32	21	660n	1980e	624762.53	3554455.49
1524	Panther City Investment Company, P	25	32	21	660n	660e	625164.77	3554461.94
1525	Panther City Investment Company, P	25	32	21	1980s	1980w	624370.15	3553643.94
1526	Texaco Incorporated, G.E. Jordan Fe	25	32	22	1980n	660w	625574.68	3554067.08
1527	Texaco Incorporated, G.E. Jordan Fe	25	32	22	660n	660w	625567.01	3554469.31
1528	Texaco Incorporated, Cotton Draw U	25	32	22	2310s	330w	625479.65	3553762.04
1529	Texaco Incorporated, G.E. Jordan Fe	25	32	22	510n	1830w	625922.63	3554523.01
1530	Texaco, C.D. Unit No. 18	25	32	22	1650n	1650w	625874.20	3554174.38
1531	Joseph L. O'Neill, Federal P #1	25	32	23	660n	1980e	628010.94	3554505.46
1533	Texaco Incorporated, Cotton Draw U	25	32	27	330n	330w	625494.99	3552957.88
1534	Texaco Incorporated, Cotton Draw U	25	32	28	660n	1980w	624385.80	3552839.48
1535	Texaco Incorporated, Cotton Draw U	25	32	28	660n	990e	625094.59	3552850.87
1536	Tenneco Oil Company, J.D. Sena U.S	25	32	28	2310s	1650w	624292.96	3552130.65
1537	Texaco Incorporated, Cotton Draw U	25	32	28	660n	2310e	624692.35	3552844.42
1539	Texaco Incorporated, Cotton Draw U	25	32	28	660n	660w	623983.56	3552833.03
1540	Texaco Incorporated, Cotton Draw U	25	32	28	1650n	990e	625100.72	3552549.20
1541	Texaco Incorporated, Cotton Draw U	25	32	28	1980n	1980w	624390.11	3552437.22
1542	Tenneco Oil Company, J.D. Sena Jr. U	25	32	28	2310s	990w	624095.80	3552127.60
1543	Texaco Incorporated, Cotton Draw U	25	32	29	1980n	330e	623686.20	3552425.86
1544	I.W. Lovelady, Conoco Federal #1-29	25	32	29	990s	330e	623693.92	3551719.79
1545	Ray Smith, Ray Smith #1	25	32	31	1980n	660w	620751.56	3550773.92
1546	R.C. Graham, Conoco State No. 1	25	32	32	1980n	1980w	622778.29	3550805.35
1547	Westates Petroleum Corp. of Texas, J	25	32	33	1980s	560e	625259.76	3550437.91
1548	Hill & Meeker, Hall-Federal 1-33	25	32	33	660s	660w	624010.43	3550015.72
1549	Hill & Meeker, Jennings-Federal 1-33	25	32	33	2310n	2310w	624507.36	3550726.13
1550	Perry R. Bass, Federal-Muse #1	25	33	1	660n	660w	638422.52	3559467.12
1551	Hill & Meeker, Bass Federal #1	25	33	5	660n	660e	633196.57	3559401.83
1552	Santana Petroleum Corp., Annie Bass	25	33	8	1980s	660e	633226.74	3556991.36
1553	Curtis Hankamer, Muse Federal #1	25	33	11	660n	660w	636831.39	3557838.67
1554	Sam H. Jolliffe Jr., #1 Bass Federal	25	33	18	660n	660w	630415.04	3556152.32
1555	Curtis Hankamer, Federal Bass #1	25	33	20	660n	1980e	632862.61	3554569.92
1556	George L. Buckles Co., Federal Marsh	25	33	21	660n	660e	634862.94	3554588.39
1557	American Quasar Petroleum Compan	25	33	21	660s	660e	634879.53	3553384.69
1558	Hill & Meeker, Muse-Federal 23 #1	25	33	23	660s	660w	636903.91	3553409.40

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
1559	R.B. Farris, Perry Federal 1	25	33	24	660s	660w	638511.72	3553428.80
1560	King Resources, Pan American Feder	25	33	25	1980s	660w	638524.99	3552219.89
1561	Ashmun & Hilliard, Federal No. 1-25	25	33	25	660s	660e	639738.81	3551833.33
1562	Robert A. Dean, Harry Dickson #1	25	33	27	660s	660e	636518.32	3551794.52
1563	Tidewater Oil Company, Annie R. Ba	25	33	28	660s	660e	634905.03	3551775.40
1564	Curtis Hankamer, Conley Federal #1	25	33	28	660n	660e	634885.68	3552982.44
1565	Tenneco Oil Company, W.H. Jenning	25	33	29	1980n	660w	632078.48	3552546.34
1566	Tenn. Gas Transmission Co, Richards	25	33	31	660s	660w	630505.36	3550124.44
1567	Pure Oil Company, Red Hills Unit #1	25	33	32	330s	2310e	632821.70	3550047.64
1568	Neil H. Wills, Continental State No. 1	25	33	32	1980s	660e	633318.97	3550556.00
1569	Max M. Wilson, Marathon-State #1	25	33	36	660s	660w	638551.12	3550211.36
1570	Ashmun Hilliard Oil Company, State	25	33	36	660n	660w	638533.92	3551415.37
1628	Getty Oil Company Stock Unit #1	21	33	15	1980s	1980e	635564.93	3594016.68
1629	Amoco Production Company State L	21	33	32	1980s	1980w	631999.06	3589163.95
1630	Department of Energy WIPP No. H-	22	31	28	89n	175e	615315.00	3581859.00
1631	Dual Production Co. Richardson-Bass	22	33	5	660s	330e	632925.91	3587150.70
1632	Getty Oil Company Getty Federal 15	22	33	15	1980s	1980e	635661.68	3584375.85
1633	Davis and Collins Conoco Federal #1	22	33	20	1980n	660w	631654.58	3583121.47
1634	Exxon Company, USA Exxon Pouch	24	29	11	1980n	660e	599068.64	3566665.46
1635	Getty Oil Company HNG State 4-F #	24	33	4	1980n	1650w	633778.52	3568661.62
1636	Getty Oil Company Getty 28 State N	24	33	28	1980s	1680e	634461.52	3561828.86
1637	Duncan Drilling Company Slater A #	25	29	31	1980s	660e	592796.02	3550002.58
1638	Pauley Petroleum Poker Lake #46	25	31	5	660n	660w	612600.54	3559162.99
1639	Helbing & Podpechan Shell State #1-	22	33	32	660s	660w	631712.90	3579093.52
1641	H-16	22	31	20	1113s	1241e	613369.00	3582212.00
1642	H-17	23	31	3	1466s	993w	615718.00	3577513.00
1643	H-18	22	31	20	964n	446w	612264.00	3583166.00
3000	D-268						608702.00	3578877.00
3001	Engle						614953.00	3567454.00
3002	H-3b1						613729.00	3580895.00
3003	H-8b						608683.00	3563556.00
3004	H-10b						622975.00	3572473.00
3005	H-11b4						615301.00	3579131.00
3006	H-19b0						614514.00	3580718.00
3007	WIPP-28						611266.00	3594680.00

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3008	WQSP-1						612561.00	3583427.00
3009	WQSP-2						613776.00	3583973.00
3010	WQSP-3						614686.00	3583518.00
3011	WQSP-4						614728.00	3580766.00
3012	WQSP-5						613668.00	3580353.00
3013	WQSP-6						612605.00	3580736.00
5000	Hanagan No. 2 Unocal-HPC	22	31	1	1980n	990e	619803.28	3587752.09
5002	Phillips Molly State No. 2	22	31	1	1980n	1980w	619099.34	3587744.65
5004	Phillips Molly State No. 4	22	31	1	1980n	535w	618658.70	3587739.16
5005	Pogo Federa 1 No. 1	22	31	1	2310s	1980w	619103.08	3587438.70
5006	Pogo Federal 1 No. 3	22	31	1	2310s	990e	619807.04	3587441.88
5007	Pogo 1 Federal No. 4	22	31	1	2310s	660w	618700.82	3587436.19
5008	Pogo Federal 1 No. 5	22	31	1	990s	990w	618808.15	3587036.42
5009	Pogo Federal 1 No. 6	22	31	1	900s	1880w	619079.23	3587010.68
5010	Pogo Federal 1 No. 6	22	31	1	990s	2310e	619408.79	3587040.47
5011	Yates Unocal "AHU" Federal No. 2	22	31	1	660n	660e	619898.90	3588153.44
5012	Pogo Federal 1 No. 2	22	31	1	2310s	1980e	619505.34	3587440.60
5014	Pogo State "2" No. 3	22	31	2	2310s	330e	618400.98	3587430.36
5015	Yates Martha "AIK" Federal No. 1	22	31	11	330s	430e	618399.80	3585225.16
5016	Yates Martha "AIK" Federal No. 2	22	31	11	1980s	330e	618423.80	3585726.32
5019	Yates Martha "AIK" Federal No. 5	22	31	11	1980n	330e	618418.83	3586131.92
5020	Yates Martha "AIK" Federal No. 6	22	31	11	660n	330e	618413.89	3586532.94
5021	Pogo Federal 12 No. 2	22	31	12	1980s	660w	618724.56	3585731.25
5022	Pogo Federal 12 No. 4	22	31	12	1980n	330w	618619.96	3586133.17
5023	Pogo Federal 12 No. 5	22	31	12	660n	330w	618615.03	3586532.98
5024	Pogo Federal 12 No. 6	22	31	12	2310s	1650w	619025.02	3585833.38
5025	Pogo Federal 12 No. 7	22	31	12	1650n	1650w	619020.07	3586235.63
5027	Pogo SCL Federal No. 2	22	31	12	1980n	1980e	619524.13	3586138.81
5028	Pogo Federal 12 No. 3	22	31	12	330s	1980w	619132.99	3585233.08
5029	Texaco Federal Neff "13" No. 2	22	31	13	1980n	660e	619946.46	3584536.00
5030	Texaco Neff 13 No. 3	22	31	13	660s	1980e	619553.81	3583724.74
5032	Texaco Federal Neff 13 No. 6	22	31	13	990n	330w	618636.01	3584829.23
5033	Texaco Federal Neff 13 No. 7	22	31	13	2310n	330w	618640.64	3584429.12
5034	Texaco Federal Neff 13 No. 8	22	31	13	1651s	330w	618645.97	3584014.99
5035	Yates Dolores "AIL" Federal No. 3	22	31	14	1980n	430e	618406.28	3584527.31

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5036	Yates Dolores "AIL" Federal No. 2	22	31	14	1980s	430e	618411.63	3584109.53
5037	Yates Dolores "AIL" Federal No. 1	22	31	14	660n	430e	618401.65	3584928.34
5038	Pogo Federal 23 No. 1	22	31	23	660s	660e	618360.74	3582104.54
5039	Pogo Federal "23" No. 2	22	31	23	1750s	660e	618357.76	3582435.79
5040	Pogo Federal "23" No.3	22	31	23	2310n	660e	618354.82	3582810.32
5041	Pogo Federal 23 No. 5	22	31	23	660n	510e	618395.88	3583311.59
5042	Texaco Getty Federal 24 No. 4	22	31	24	1980s	1980w	619161.85	3582509.68
5043	Texaco Getty Federal 24 No. 5 SWD	22	31	24	990n	1652w	619055.35	3583217.57
5044	Texaco Getty Federal 24 No. 2	22	31	24	660s	660w	618763.32	3582104.92
5045	Getty Federal #24-1	22	31	24	1980n	1980e	619560.94	3582923.58
5046	Pogo Neff Federal No. 2	22	31	25	1650n	330w	618670.17	3581402.49
5047	Pogo Federal Neff No. 1	22	31	25	660n	1980w	619168.68	3581707.61
5048	Texaco Getty Federal 24 No. 3	22	31	24	660n	2310e	619457.27	3583322.47
5049	Pogo Federal 26 No. 1	22	31	26	610n	510e	618410.68	3581719.34
5050	Pogo Federal 26 No. 2	22	31	26	1980n	1980e	617968.03	3581303.04
5051	Pogo Federal "26" No. 3	22	31	26	610n	2130w	617617.72	3581717.75
5052	Pogo Federal 26 No. 4	22	31	26	600n	330w	617069.45	3581721.04
5053	Pogo Federal 26 No. 5	22	31	26	330n	2230e	617885.69	3581801.71
5054	Pogo Federal 26 No. 6	22	31	26	1980n	330w	617074.50	3581302.04
5055	Pogo Federal 26 No. 7	22	31	26	1980n	1980w	617576.74	3581301.51
5056	Yates David Ross "AIT" Federal No.	22	31	35	1980n	660e	618392.84	3579691.40
5057	Union of CA Medano State Com. We	22	31	36	1980s	1980w	619203.30	3579280.46
5059	Bass Big Eddy Unit No. 44	21	30	16	1980n	660e	605368.51	3594088.53
5060	Bass Big Eddy No. 45-Y	21	30	16	1980n	751e	605341.08	3594088.06
5061	Phillips James "D" No. 1	21	30	26	660s	1980w	607822.34	3590086.68
5062	Yates Kaleidoscope "AIO" Federal N	21	30	33	1980n	660e	605412.68	3589260.09
5063	Yates Julia "AJL" Federal No. 4	21	30	34	1980n	1980e	606623.66	3589273.44
5064	Phillips Peak View No. 1	21	30	35	660s	330e	608743.26	3588481.52
5065	Phillips James "C" No. 1	21	30	35	1980s	660w	607431.62	3588871.34
5066	C. Grace Livingston Ridge No. 1-Y	21	30	36	1980s	990w	609138.13	3588884.73
5068	Yates Mary "AIV" State No. 5	21	31	36	660n	330e	619980.29	3589761.22
5069	Yates Mary "AIV" State No. 3	21	31	36	660n	1980e	619478.70	3589755.96
5070	Yates Mary "AIV" State No. 1	21	31	36	1980n	1980e	619483.63	3589356.15
5071	Yates Lost Tank "AIS" State No. 8	21	31	36	660s	660e	619894.88	3588554.47
5072	Yates Lost Tank "AIS" State No. 6	21	31	36	1980s	1980e	619488.60	3588950.55

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5073	Yates Lost Tank "AIS" State No. 5	21	31	36	660s	660w	618687.22	3588540.84
5075	Yates Lost Tank "AIS" State No. 3	21	31	36	660s	1980w	619089.47	3588545.48
5076	Yates Lost Tank "AIS" State No. 2	21	31	36	660s	1980e	619493.55	3588549.53
5079	Yates "AJA" Federal No. 7	21	31	24	660s	330e	619952.80	3591773.04
5080	Yates Bonneville "AKK" Federal No.	21	31	24	660s	200e	620001.57	3591770.29
5081	Yates Wolf "AJA" Federal No. 5	21	31	25	1980n	330e	619963.60	3590970.99
5082	Yates Wolf "AJA" Federal No. 4	21	31	25	1980s	330e	619970.42	3590562.05
5084	Yates Jasmine "AJI" Federal No. 1	22	30	1	660s	2310e	609766.85	3586878.84
5085	Phillips Livingston Ridge No. 2	22	30	1	2240s	1200w	609201.30	3587357.73
5086	Troporo Cabana No. 1	22	30	1	660s	700w	609055.62	3586870.74
5087	Phillips Livingston Ridge No. 4	22	30	1	430n	860w	609085.41	3588153.01
5088	Hanagan No. 1 Unocal-HPC	22	31	1	1650n	1980e	619500.36	3587848.03
5089	Phillips Livingston Ridge No. 3	22	30	1	1450n	660w	609033.47	3587832.09
5090	Phillips Livingston Ridge No. 6	22	30	1	1980s	1980w	609440.12	3587276.02
5091	Yates Donell 3 Federal No. 1	22	30	3	1980n	1980e	606595.61	3587665.42
5092	Phillips James "A" No. 12W	22	30	2	1250s	1150e	608493.49	3587044.90
5093	Phillips James A No. 10	22	30	2	660s	2310w	607917.44	3586861.20
5094	Phillips James A No. 9	22	30	2	660n	500e	608675.36	3588080.66
5095	Phillips James A No. 8	22	30	2	1650n	660e	608630.92	3587778.99
5096	Phillips James "A" No. 4	22	30	2	1980n	1980e	608230.81	3587676.84
5097	Phillips James "A" No. 3	22	30	2	1980s	1980w	607807.68	3587260.96
5098	Phillips James "A" No. 2	22	30	2	1652s	1980e	608237.37	3587163.99
5099	Phillips James "A" No. 6	22	30	2	1980s	660e	608638.37	3587268.27
5100	Phillips James A No. 7	22	30	2	500s	660e	608644.53	3586818.50
5101	Phillips James "A" No. 5	22	30	2	660s	1800e	608297.14	3586864.49
5102	Phillips James A No. 1	22	30	2	665s	2006e	608234.05	3586864.70
5103	Mitchell Energy Apache "13" Federal	22	30	13	1330n	330e	610394.63	3584680.94
5104	Phillips James E No. 15	22	30	12	1980s	995w	609154.58	3585663.03
5105	Phillips James "E" No. 14	22	30	12	1980n	1980w	609453.71	3586074.17
5106	Phillips James "E" No. 13	22	30	12	1980n	660w	609051.47	3586069.53
5107	Phillips James "E" No. 12	22	30	12	660n	1980w	609451.82	3586475.21
5109	Phillips James "E" No. 11	22	30	12	660n	660w	609049.58	3586470.57
5110	Bass James Ranch Unit No. 48	22	30	12	990s	330w	608956.87	3585358.27
5111	Phillips James "E" No. 8	22	30	11	2247s	1558e	608376.39	3585737.41
5112	Phillips James "E" No. 6	22	30	11	1980s	1980e	608250.44	3585654.95

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5113	Phillips James "E" Federal No. 5	22	30	11	1810n	330e	608748.24	3586120.36
5114	Phillips James "E" Federal No. 4	22	30	11	760n	330e	608748.38	3586438.52
5115	Phillips James "E" No. 2	22	30	11	535n	2080w	607852.06	3586496.93
5116	Shell James Ranch No. 1	22	30	36	660s	2009e	609945.54	3578841.88
5117	Enron James Ranch Unit No. 71	22	30	36	330n	660e	610340.77	3580168.48
5118	Enron James Rand Unit No. 37	22	30	36	1980s	660e	610351.10	3579243.32
5119	Enron James Ranch Unit No. 19	22	30	36	1980s	1980e	609949.45	3579242.04
5120	Belco James Ranch No. 11	22	30	36	1980n	920w	609196.89	3579654.56
5121	Enron James Ranch Unit No. 18	22	30	36	1980n	1100e	610212.14	3579634.98
5122	Phillips James "E" No. 1	22	30	11	1980n	1980e	608246.99	3586061.47
5123	Bass James Ranch Unit No. 29	22	30	36	1980s	2310w	609624.89	3579241.85
5124	Mitchell Apache "25" Federal No. 1	22	30	25	1730n	660e	610329.15	3581349.31
5125	Mitchell Apache "25" Federal Com. N	22	30	25	660s	1310e	610140.85	3580463.15
5126	Mitchell Apache "24" Federal No. 1	22	30	24	1200s	330e	610420.51	3582240.05
5127	Belco (Bass?) Belco-James Ranch No.	23	30	1	1980n	660e	610294.95	3578081.57
5128	Belco Hudson Federal No. 1	23	30	1	1830n	1980w	609535.48	3578086.29
5129	Belco James Ranch Unit No. 3	23	30	1	1980s	1658e	610063.64	3577641.29
5130	Texaco Forty-Niner Ridge Unit No. 3	23	30	16	2310n	1980w	604684.35	3574681.94
5131	Phillips Sandy Unit No. 1	23	30	24	1980n	660w	609187.07	3573201.44
5132	Devon Todd 13 'O' Federal No. 15	23	31	13	760s	2080e	619647.81	3574109.42
5133	Max M. Wilson Bauerdorf-Federal No	23	31	11	660s	330e	618543.44	3575668.07
5134	Santa Fed North Pure Gold "9" No. 9	23	31	9	330s	1980e	614824.51	3575527.00
5135	Santa Fe North Pure Gold "9" Federa	23	31	9	1980n	1980w	614412.95	3576431.99
5136	Santa Fe North Pure Gold "9" Federa	23	31	9	1980n	660w	614008.56	3576428.25
5137	Santa Fe North Pure Gold "9" Federa	23	31	9	1140n	990w	614106.01	3576685.46
5138	Santa Fe North Pure Gold "9" Federa	23	31	9	660s	660w	614017.91	3575611.88
5139	Santa Fe North Pure Gold "9" Federa	23	31	9	330s	1980w	614421.98	3575519.01
5140	Santa Fe Pure Gold "4" Federal No. 1	23	31	9	900n	1980w	614408.16	3576761.09
5141	Santa Fe North Pure Gold "8" Federa	23	31	8	660s	860e	613555.91	3575610.84
5142	Santa Fe North Pure Gold "8" Federa	23	31	8	1980s	2310e	613112.77	3576007.91
5143	Santa Fe North Pure Gold "8" Federa	23	31	8	660s	2310e	613113.73	3575609.00
5144	Santa Fe North Pure Gold "8" Federa	23	31	8	1780n	660e	613605.95	3576483.35
5145	Santa Fe North Pure Gold "8" Federa	23	31	8	1980s	860e	613554.03	3576011.88
5146	Santa Fe North Pure Gold "8" Federa	23	31	8	1980s	660e	613611.63	3576011.32
5147	Belco James Ranch Unit 14	23	31	6	100s	1980w	611178.92	3577021.37

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5148	Belco James Ranch Unit No. 15	23	31	8	660s	100w	612239.72	3575606.61
5149	Enron James Ranch Unit No. 17	23	31	6	2080n	1980w	611169.99	3577966.34
5150	Bass James Ranch No. 13	23	31	6	1440n	860w	610826.27	3578156.50
5151	Continental James Ranch Unit No. 7	23	31	6	1980n	1980e	611579.65	3578003.33
5152	Bass James Ranch Unit No. 30	23	31	6	1980s	2310e	611482.83	3577596.80
5153	Continental State AA-2 No. 1	23	31	2	660n	660e	618413.21	3578474.35
5154	Union of CA Barclay Federal No. 1	23	31	1	660s	1980w	619233.43	3577279.94
5155	Owens Union Federal No. 1	23	31	1	1980s	660w	618824.73	3577674.80
5158	Maralo Prohibition Federal Unit No.	22	32	12	1980n	600w	628383.05	3586290.37
5159	Pogo WBR Federal No. 1	22	32	13	1980n	990e	629527.62	3584694.48
5160	Ray Smith B&H Federal No. 1	22	32	13	660s	660e	629639.91	3583889.40
5161	Maralo Prohibition Federal Unit No.	22	32	14	2310n	1980e	627625.50	3584567.42
5162	Meridian Red Tank Federal No. 4	22	32	14	1650s	2135w	627272.98	3584162.94
5163	Meridian Red Tank Federal No. 1	22	32	14	330s	1980w	627240.19	3583751.32
5164	Meridian Red Tank Federal No. 3	22	32	14	330s	990w	626938.52	3583745.17
5165	Carper Red Tank Unit No. 2 (SWD?)	22	32	14	660s	1980w	627238.96	3583850.96
5166	Meridian Red Tank Federal No. 5 (SW	22	32	14	330s	2310e	627535.46	3583757.42
5167	Superior No. 1 Connally Federal	22	32	15	1980s	1980e	626029.47	3584227.42
5168	Strata Paisano Federal No. 3	22	32	15	990n	660w	625207.47	3584923.84
5169	Strata Paisano Federal No. 2	22	32	15	2310n	1650w	625515.30	3584528.97
5170	Strata Paisano Federal No. 1	22	32	15	1980n	460w	625151.14	3584621.78
5171	Strata Lechuza Federal No. 5	22	32	15	1650s	330w	625119.89	3584110.51
5173	Strata Lechuza Federal No. 3	22	32	15	660s	2310e	625935.07	3583825.16
5174	Strata Lechuza Federal No. 2	22	32	15	1650s	1650w	625522.43	3584117.90
5175	Strata Lechuza Federal No. 1	22	32	15	862s	458w	625163.44	3583871.85
5176	Yates Kiwi "AKX" State No. 3	22	32	16	2310n	330e	624914.38	3584517.91
5177	Yates Kiwi "AKX" State No. 2	22	32	16	1650s	330e	624920.60	3584106.83
5179	Yates Kiwi "AKX" State No. 4	22	32	16	330s	1650e	624526.36	3583697.22
5180	Yates Kiwi "AKX" State No. 5	22	32	16	1980s	1650e	624518.06	3584198.19
5181	Yates Kiwi "AKX" State No. 6	22	32	16	660s	2310w	624121.68	3583790.69
5182	Yates Kiwi "AKX" State No. 7	22	32	16	1980n	1980e	624411.26	3584611.07
5183	Yates Kiwi "AKX" State No. 8	22	32	16	1980n	2310w	624109.59	3584604.93
5184	Yates Kiwi "AKX" State No. 9	22	32	16	330n	330e	624904.86	3585117.31
5185	Yates Cleary "AKC" Feceral No. 1	22	32	17	1980s	1980e	622810.99	3584170.78
5186	Yates Cleary "AKC" Federal No. 2	22	32	17	330n	330w	621891.41	3585072.31

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5188	Pogo Livingston Ridge Federal No. 1	22	32	18	660n	990e	621493.16	3584964.38
5189	Pogo Livingston Ridge Federal No. 3	22	32	18	480n	330w	620243.46	3584996.20
5190	Pogo East Livingston Ridge Federal N	22	32	18	2130n	1980e	621197.01	3584513.02
5191	Zonne Federal No. 1	22	32	20	1980n	1980e	622826.10	3582968.62
5192	Union of CA Federal Gilmore No. 1 (	22	32	21	1980s	660e	624839.55	3582588.94
5193	Strat Cercion Federal No. 3	22	32	21	390n	1980e	624426.53	3583481.13
5194	Strat Cercion Federal No. 1	22	32	21	1990n	660e	624834.23	3583003.07
5195	Trigg Federal Red Tank No. 1-22	22	32	22	1980n	660w	625237.66	3583013.82
5196	Strata Cercion Federal No. 4	22	32	22	1650n	1980w	625637.74	3583122.06
5197	Strata Cercion Federal No. 2	22	32	22	330n	990w	625331.74	3583516.95
5198	Meridian Checkerboard 23 Federal N	22	32	23	879s	403w	626776.92	3582291.38
5199	Pogo Red Tank 23 Federal No. 2	22	32	23	2110s	990e	627945.31	3582689.97
5200	Meridian Checkerboard 23 No. 16	22	32	23	2310n	990e	627954.61	3582958.52
5201	Meridian Checkerboard 23 Federal N	22	32	23	1650n	990e	627942.96	3583164.47
5202	Meridian Checkerboard 23 Federal N	22	32	23	660n	990e	628064.47	3583570.55
5203	Meridian Checkerboard 23 Federal N	22	32	23	1980n	1980e	627640.38	3583059.57
5204	Meridian Checkerboard 23 Federal N	22	32	23	690n	1980w	627245.15	3583445.37
5206	Meridian Checkerboard 23 Federal N	22	32	23	2310s	990w	626951.86	3582729.19
5208	Pogo Covington "A" Federal No. 2	22	32	25	330n	660w	628473.97	3581971.30
5209	Pogo Covington "A" Federal No. 18	22	32	26	330n	1980e	627670.10	3581958.36
5210	Pogo Red Tank "26" Federal No. 1	22	32	26	1880s	1880w	627244.25	3580996.64
5211	Pogo Red Tank "26" Federal No. 2	22	32	26	330n	660w	626858.71	3581930.15
5212	Pogo Federal 27 No. 1	22	32	27	330s	2310w	625775.08	3580497.74
5214	Pogo Exxon Federal 27 No. 3	22	32	27	1980s	660e	626470.56	3581032.05
5216	Pogo Red Tank 28 Federal No. 3	22	32	28	330n	2310e	624348.44	3581878.85
5217	Bass Perry Federal No. 1	22	32	31	660n	1980e	621254.56	3580117.90
5218	Pogo Proximity 31 No. 4	22	32	31	660n	2085e	621222.57	3580117.70
5219	Enron Silverton 31 Federal No. 1	22	32	31	660s	660w	620416.26	3578930.84
5220	Yates Lotus "ALT" State No. 2	22	32	32	1980n	1980e	622869.68	3579740.31
5221	Pogo Red Tank 34 Federal No. 3	22	32	34	760n	660e	626485.58	3580185.52
5223	Pogo Red Tank 34 Federal No. 2	22	32	34	1980n	660e	626487.22	3579825.62
5224	Pogo Red Tank 35 Federal No. 1	22	32	35	660n	330w	626784.92	3580223.96
5226	Helbing & Podpechan Shell State No.	22	33	32	660s	660w	631697.08	3579087.93
5227	CP Miller Humble State No. 1	22	33	34	660s	1980e	635722.09	3579131.89
5228	Amoco Federal "BG" No. 1	22	33	35	1980n	1980w	636911.94	3579954.23

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5229	Yates pronghorn Unit No. 2	22	33	30	1980n	660e	631260.30	3581495.25
5230	Mitchell Bighorn "30" State No. 2	22	33	30	2310n	1650w	630390.91	3581384.08
5231	Yates Pronghorn "ACZ" Federal No.	22	33	29	1980s	660w	631667.25	3581089.71
5232	Davis & Collins Conoco Federal No.	22	33	20	1980n	660w	631631.51	3583108.22
5233	Santa Fe Bootleg Ridge 19 State No.	22	33	19	990n	990w	630149.51	3583394.29
5234	Pogo State NBR No. 2	22	33	18	1980n	1864w	630395.21	3584702.63
5235	Pogo State NBR No. 1	22	33	18	1980s	1980e	630807.91	3584302.62
5236	Dual Hudson Federal No. 1	22	33	9	660n	660w	633181.44	3586737.21
5237	Pogo EBR Federal No. 1	22	33	17	1980s	660w	631609.69	3584310.36
5238	Meridian Dagger Lake "8" Federal No	22	33	8	660n	1980w	631974.64	3586729.68
5239	Superior SST State 7 No. 1	22	33	7	1980s	1980e	630780.52	3585910.36
5240	Cabot State "K" No. 1	22	33	7	660s	660w	630017.21	3585501.18
5241	Superior San Simone State Com No.	22	33	6	1980n	1980e	630767.97	3587921.69
5242	Texas Pacific Reed Federal No. 1	22	33	4	2310s	800w	633226.12	3587635.31
5243	Dual Richardson & Bass State No. 1	22	33	5	660s	330e	632884.89	3587130.33
5244	Meridian Dagger Lake State No. 1	22	33	5	330s	1980e	632382.69	3587026.63
5245	Yates Saffron Unit No. 1	23	32	2	2310n	1650e	627817.07	3578129.69
5246	OB Kiel, Jr. Federal No. 1	23	32	3	1980n	660e	626518.64	3578204.81
5247	Strata Aracanga Federal No. 1	23	32	4	330s	2310e	624431.57	3577290.35
5248	Santa Fe Platinum 6 Federal No. 1	23	32	6	660s	1980w	620833.60	3577295.08
5249	JH Trigg Federal "WL" No. 5	23	32	7	510n	660e	621705.17	3576956.74
5250	McBee Continental Federal No. 1	23	32	9	660s	1980e	624530.09	3575758.04
5251	Strata Aracanga Federal No. 2	23	32	9	1650s	1650e	624645.48	3576069.91
5252	Exxon Central SW Oil Corp Federal	23	32	11	1680n	660w	626940.98	3576695.54
5253	Superior Triste Draw Gulf Federal No	23	32	11	660s	1980w	627353.33	3575812.17
5254	Strata Urraca Federal No. 2	23	32	11	560s	660w	626952.20	3575773.72
5255	Yates Amanda "AMN" Federal No. 1	23	32	11	2310n	1650w	627235.80	3576529.75
5256	Superior Triste Draw Federal No. 1	23	32	14	1980s	1980e	627759.74	3574608.77
5257	Yates Jackal "ANJ" Federal No. 7	23	33	4	2310n	330w	633220.00	3578202.03
5258	Cabeen Continental Federal No. 1-P	23	33	4	660s	660e	634530.82	3577508.63
5259	WA & ER Hudson Shell Federal No.	23	33	6	330s	330e	631427.68	3577373.20
5260	Yates Pronghorn Unit No. 1	23	33	6	1980n	1980e	630907.64	3578273.88
5261	Hudson Federal No. 1	23	33	7	660s	660w	630163.00	3575844.89
5262	Yates Pronghorn AAP Federal No. 1	23	33	8	330s	330w	631646.12	3575769.39
5263	Amoco State "IK" No. 1	23	33	10	660n	1980w	635340.86	3577120.83

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5264	Belco Federal HM No. 1	21	32	12	1980s	660w	628363.26	3595510.70
5265	Getty State Com No. 1	21	32	32	1980n	1980e	622736.27	3589406.62
5266	Texaco Bilbrey Federal Com No. 1	21	32	33	660n	1980w	623933.76	3589829.48
5267	Texaco Bilbrey Federal No. 2	21	32	33	1980s	2310w	624046.71	3589017.71
5268	Phillips Bilbrey Federal No. 1	21	32	34	660s	1980w	625556.97	3588644.97
5269	Maralo Bilbrey Federal No. 1	21	32	34	660n	1980w	625541.15	3589861.15
5270	Gulf Chaney Federal No. 1	21	32	35	1980n	1980w	627152.87	3589493.32
5271	Manzano Anderson No. 1	21	32	35	1980s	330w	626656.62	3589071.18
5272	Phillips Luke Federal No. 2	21	32	31	660n	660w	620281.06	3589765.84
5273	Pogo Federal No. 1	21	32	31	2310s	660e	621533.01	3589079.12
5274	Collins & Ware BW Federal No. 1	21	32	31	330s	330w	620197.81	3588456.10
5275	Phillips Luke Federal No. 1	21	32	31	1980n	660w	620285.99	3589366.03
5276	AEC No. 7	21	32	31	2040n	2040e	621126.00	3589381.00
5277	Getty Bilbrey Federal Com No. 1	21	32	29	1980s	1980w	622312.54	3590598.01
5278	Santa Fe Bilbrey Federal No. 1	21	32	28	1980n	660e	624724.25	3591056.49
5279	Santa Fe Bilbrey Federal No. 1-A	21	32	27	1980n	1980w	625528.43	3591068.83
5280	Santa Fe Bilbrey Federal No. 1-A	21	32	28	1980s	1980w	623925.43	3590627.28
5301	WC Blanks Big Eddy Unit No. 67	21	30	15	1980s	990w	605873.53	3593688.51
5302	Yates Cabin Lake 34 Federal No. 1	21	30	34	330s	990e	606935.59	3588368.15
5303	C Grace Salomeh No. 1	21	30	36	330s	330w	608943.48	3588382.82
5304	Maralo MR "25" Federal No. 1	21	31	25	660s	790e	619836.39	3590160.46
5305	Pogo Federal No. 1	21	31	26	1980n	1980w	617463.00	3590936.79
5306	Union Federal FI No. 1	21	31	35	660n	660w	617068.94	3589718.67
5307	Yates Lost Tank "AIS" State No. 1	21	31	36	1980s	660e	619889.93	3588955.50
5308	Yates Lost Tank "AIS" State No. 4	21	31	36	1980s	1980w	619085.44	3588946.82
5309	Belco Federal "HM" No. 13-1	21	32	13	990n	1980w	628734.39	3594644.46
5310	Collins & Ware N.L. Federal No. 2	21	32	18	660s	1980e	621076.61	3593402.57
5311	Getty North Bilbrey 18 Federal No. 1	21	32	18	1980n	1980e	621064.54	3594212.23
5312	Skelly Salt Lake South Unit No. 1	21	32	21	660n	660w	623491.62	3593040.68
5313	Santa Fe Bilbrey "21" Federal Com. N	21	32	21	660s	1980e	624313.08	3591845.68
5314	Santa Fe Bilbrey "22" Federal Com. N	21	32	22	660s	2310e	625812.94	3591870.59
5315	Collins & Ware Lincoln Federal No. 1	21	32	26	1980s	660w	626733.39	3590685.65
5316	Santa Fe Bilbrey 27 Federal Com. No	21	32	27	1980s	990w	625231.15	3590652.80
5317	Texaco Bilbrey 32 State Com. No. 1	21	32	32	1980n	1980w	622329.47	3589399.21
5318	Bass Big Eddy Unit No. 90	22	29	4	1980s	2240w	594976.42	3587203.76

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IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5319	Hudson Federal No. 1	22	29	6	660s	660e	592502.92	3586799.48
5320	Bass Big Eddy Unit 96	22	29	16	1980s	660w	594514.84	3583962.69
5321	Bass Big Eddy Unit No. 88	22	29	18	1980s	660w	591325.60	3583981.82
5322	Phillips James E Federal No. 9	22	30	11	1060s	10e	608846.31	3585347.22
5323	Bass James Ranch Unit No. 70	22	30	12	660s	1980e	609897.94	3585308.06
5324	Richardson & Bass Federal Legg No.	22	30	27	660n	2003e	606653.58	3581641.83
5325	Bass James Ranch Unit No. 41	22	30	36	660s	2310w	609629.52	3578841.74
5326	Phillips Molly State No. 1	22	31	1	660n	1980w	619092.57	3588145.67
5327	Phillips Molly State No. 3	22	31	1	660n	660w	618691.24	3588140.72
5328	Yates Unocal "AHU" Federal No. 1	22	31	1	660n	1980e	619496.66	3588148.49
5329	Yates Flora "AKF" State No. 1	22	31	2	660s	2310w	617609.42	3586911.91
5330	Yates Graham "AKB" State No. 2	22	31	2	1980n	330e	618397.23	3587738.14
5331	Yates Graham "AKB" State No. 1	22	31	2	660n	330e	618391.38	3588138.24
5332	Yates Flora "AKF" State No. 2	22	31	2	1980s	2310w	617595.68	3587306.48
5333	Pogo State 2 No. 2	22	31	2	660s	2310e	617795.95	3586957.27
5334	Pogo State 2 No. 1	22	31	2	330s	330e	618410.21	3586829.75
5335	Bryon McKnight & Troporo Campan	22	31	6	1980n	660w	610664.51	3587633.51
5336	Yates Llama "ALL" Federal No. 1	22	31	7	330s	950w	610779.49	3585127.36
5337	Yates Martha "AIK" Federal No. 3	22	31	11	660s	1650e	618027.43	3585316.09
5338	Yates Martha "AIK" Federal No. 4	22	31	11	1980s	1650e	618022.50	3585715.90
5339	Pogo Federal 12 No. 8	22	31	12	330n	1650w	619015.13	3586636.65
5340	Texaco Federal Neff 13 No. 5	22	31	13	1980n	1980w	619141.63	3584531.90
5341	Pogo Neff 13 No. 1	22	31	13	1980s	1980e	619548.87	3584125.76
5342	Clayton W. Williams Badger Unit Fed	22	31	15	1980s	1980w	615941.76	3584086.21
5343	Texas Crude Wright Federal 23 No. 1	22	31	23	330s	330e	618461.63	3582003.69
5344	Pogo Neff Federal No. 3	22	31	25	430n	760w	618796.45	3581775.38
5345	Siete Ottowa State No. 1	22	32	3	1980s	1980w	625572.42	3587439.45
5346	Santa Fe Trumpeter 4 State No. 1	22	32	4	660s	1980e	624372.79	3587016.28
5347	Getty Bilbrey Federal Com. No. 1	22	32	4	660n	1980w	623956.31	3588218.68
5348	Getty Bilbrey Federal No. 1	22	32	5	660n	1580e	622750.82	3588198.97
5349	Yates Rosemary "AJB" Federal No. 1	22	32	6	1980s	660w	620311.08	3587347.50
5350	Pogo Federal 6 No. 1	22	32	6	800n	330w	620201.75	3588117.24
5351	Amoco Federal "CK" Com. No. 1	22	32	6	1980n	660e	621549.04	3587780.66
5352	Strata Flamenco Federal No. 1	22	32	7	1650s	660w	620334.22	3585641.32
5353	Santa Fe White Swam "9" Federal No	22	32	9	330s	330e	624911.41	3585336.77

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5354	Santa Fe White Swam "9" Federal No	22	32	9	1980n	660e	624791.03	3586216.46
5355	Maralo Wild Turkey "9" state No. 1	22	32	9	1980s	990e	624692.98	3585813.57
5356	Maralo Wild Turkey "10" state No. 1	22	32	10	1980s	330w	625108.78	3585844.20
5357	WTI Barr None Federal No. 1	22	32	10	1980n	660w	625187.72	3586233.26
5358	Phillips Emerald Federal No. 1	22	32	10	660s	660w	625211.85	3585442.57
5359	Maralo Prohibition Federal No. 2	22	32	11	1980s	2080w	627240.76	3585859.94
5360	Maralo Prohibition Federal Unit No.	22	32	14	2310n	990e	627927.20	3584569.30
5361	Meridian Redchecker 14 No. 2	22	32	14	1650s	990e	627931.55	3584164.92
5362	Meridian Redchecker 14 No. 1	22	32	14	330s	990e	627936.79	3583763.89
5363	Meridian Prohibition Federal No. 5	22	32	14	2310n	2155w	627276.57	3584565.25
5364	Meridian Red Tank Federal No. 6	22	32	14	1650s	1980w	627225.74	3584162.65
5365	Strata Lechuza Federal No. 4	22	32	15	660s	1650w	625527.05	3583816.52
5366	Yates Kiwi "AKX" State No. 1	22	32	16	330s	330e	624927.68	3583705.82
5367	John H. Trigg Federal Jennings No. 1	22	32	18	660s	660e	621607.96	3583755.83
5368	Ralph Lowe Bass Federal No. 1	22	32	19	660s	660e	621624.46	3582135.85
5369	Strata Cercion Federal No. 5	22	32	21	330n	330e	624928.29	3583508.64
5370	Pogo Prize Federal No. 13	22	32	22	1980s	330e	626549.65	3582620.93
5371	Pogo Prize Federal No. 10	22	32	22	660s	330e	626553.97	3582220.81
5372	Meridian Checkerboard 23 Federal N	22	32	23	660n	1980e	627638.19	3583460.62
5373	Meridian Checkerboard 23 Federal N	22	32	23	2310n	2295w	627346.64	3582954.73
5374	Meridian Checkerboard 23 Federal N	22	32	23	330s	1650e	627748.47	3582146.89
5375	Meridian Checkerboard 23 Federal N	22	32	23	1980s	1980e	627659.01	3582661.98
5376	Meridian Checkerboard 23 Federal N	22	32	23	990s	2310w	627357.50	3582336.75
5377	Meridian Checkerboard 23 Federal N	22	32	23	1650s	1980w	627254.16	3582536.94
5378	Meridian Checkerboard 23 Federal N	22	32	23	1980n	990w	626947.75	3583047.03
5380	Pogo Covington "A" Federal No. 8	22	32	25	330s	660w	628478.59	3580546.28
5381	Pogo Covington "A" Federal No. 9	22	32	25	480s	1980w	628878.72	3580596.92
5382	Pogo Covington "A" Federal No. 1	22	32	25	660n	1980w	628857.12	3581863.36
5383	Pogo Red Tank "26" Federal No. 3	22	32	26	1980n	330w	626766.46	3581427.03
5384	Pogo Red Tank "26" Federal No. 4	22	32	26	2310s	330w	626770.49	3581121.38
5385	Pogo Prize Federal No. 4	22	32	27	1880n	760e	626436.25	3581451.48
5386	Pogo Prize Federal No. 5	22	32	27	660n	660e	626460.46	3581821.91
5387	Pogo Exxon Federal 27-2	22	32	27	660s	660e	626478.96	3580613.36
5389	Pogo Red Tank "28" Federal No. 1	22	32	28	330n	330e	624951.17	3581892.05
5390	Pogo Red Tank "34" Federal No. 14	22	32	34	710n	2310w	625780.99	3580185.40

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
5391	Pogo Red Tank "34" Federal No. 4	22	32	34	1980n	1980e	626089.62	3579806.99
5392	Pogo Red Tank "34" Federal No. 1	22	32	34	660n	1650e	626184.02	3580210.47
5393	Pogo Red Tank "35" Federal No. 3 SV	22	32	35	2310s	990w	626990.44	3579521.25
5394	Shell Bootleg Ridge Unit No. 1	22	32	36	330n	1980w	628882.67	3580354.36
5395	Meridian Mule Deer 36 State No. 1	22	32	36	330n	1980e	629284.94	3580356.86
5396	Meridian Mule Deer 36 State No. 2	22	32	36	1980n	2310e	629187.50	3579853.40
5397	Meridian Mule Deer 36 State No. 4	22	32	36	660n	860e	629626.88	3580258.42
5398	Meridian Dagger Lake 8 Fed No. 2	22	33	8	330n	2310e	632275.71	3586832.13
5399	Getty Federal 15 No. 1	22	33	15	1980s	1980e	635635.29	3584356.48
5400	Getty Federal 15 Com "B" No. 1	22	33	15	660n	1980w	635228.00	3585158.51
5401	Collins & Ware White Lightning Fede	22	33	19	1980s	660e	631238.51	3582694.04
5402	R.B. Farris Phillps State No. 1	22	33	33	660n	660e	634495.88	3580330.50
5501	Pogp Lost Tank 4 Fed. No. 7	22	31	4	1330n	660e	615093.15	3587877.52
5502	Pogo Lost Tank 4 Fed. No. 6	22	31	4	1650n	1650e	614789.02	3587776.57
5503	Pogo Lost Tank 4 Fed. No. 5	22	31	4	1650n	2310w	614377.63	3587774.01
5504	Pogo Lost Tank 4 Fed. No. 3	22	31	4	330n	330e	615182.62	3588190.45
5505	Pogo Lost Tank 4 Fed. No. 2	22	31	4	330n	1650e	614786.46	3588187.97
5506	Pogo Lost Tank 4 Fed. No. 1	22	31	4	330n	2310w	614382.58	3588200.69
5507	Pogo Lost Tank 3 Fed. No. 6	22	31	3	330n	430e	616767.08	3588230.81
5508	Pogo Lost Tank 3 Fed. No. 1	22	31	3	330n	660w	615479.65	3588207.54
5509	Pogo Lost Tank 3 Fed. No. 5	22	31	3	1950n	1300e	616511.28	3587711.13
5510	Pogo Lost Tank 3 Fed. No. 4	22	31	3	1330n	480w	615428.41	3587871.99
5511	Pogo Lost Tank 3 Fed. No. 2	22	31	3	300n	1650w	615784.43	3588201.82
6122	IMC #343	22	30	9	1485s	650w	604170.00	3585500.00
6144	Duval #29	23	29	1	2763s	2964e	599825.00	3577780.00
6145	IMC I-184	23	29	1	528s	528w	599300.00	3577130.00
6146	IMC I-263	23	29	1	1320n	1320e	600350.00	3578170.00
6147	Arco #9	23	29	4	1255n	1374e	595500.00	3578180.00
6148	Shell Oil Company #17 (Dogtown #	23	29	12	2600n	700e	600550.00	3576200.00
6149	Shell Oil Company #21 (Dogtown #1	23	29	13	2100n	300e	600700.00	3574700.00
6151	Duval #14	23	29	15	1160n	3276e	596540.00	3575000.00
6155	Laguna Grande #2	23	29	27	660s	1980w	596600.00	3570670.00
6156	#1 Laguna Grande Unit	23	29	28	1380s	990e	595680.00	3570850.00
6157	A-29	23	29	35	1900s	100e	599200.00	3569430.00
6158	A-31	23	29	36	1800s	1200e	600500.00	3569420.00

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
6161	Duval #1	23	30	2	101s	1169w	607670.00	3577075.00
6162	Duval D-31	23	30	2	143n	112w	607330.00	3578600.00
6163	Duval D-179	23	30	2	2655n	2655e	608675.00	3577840.00
6164	Shell Oil Company #6 (Dogtown #1)	23	30	17	2505n	317w	602450.00	3574600.00
6165	Duval #10	23	30	19	2244n	2096e	601815.00	3573060.00
6168	Duval #4	23	30	28	175s	232w	604185.00	3570620.00
6169	Shell Oil Company #7 (Dogtown #2)	23	30	29	261n	261e	604025.00	3572085.00
6170	Shell Oil Company #20 (Dogtown #1	23	30	30	215n	2300w	601540.00	3572075.00
6171	Arco #24	23	30	31	2640n	1750e	600995.00	3569715.00
6172	Shell Oil Company #23 (Dogtown #1	23	30	32	1411n	2510e	603370.00	3570110.00
6173	Leonard #1-S	23	30	36	2150n	3090w	609960.00	3570020.00
6177	Bun #1	24	29	19	480n	330w	591330.00	3563820.00
6179	Ellis Federal 1-X	24	29	29	1980s	660w	593075.00	3561330.00
6180	Shell Oil Company #16 (Dogtown #1	24	30	2	200s	200w	607500.00	3567420.00
6181	Shell Oil Company #11 (Dogtown #6	24	30	5	1147n	406e	604075.00	3568580.00
6182	Arco #8	24	30	6	1990n	2185w	601540.00	3568290.00
6183	Shell Oil Company #8 (Dogtown #3)	24	30	9	2001n	2001e	605220.00	3566730.00
6184	Shell Oil Company #12 (Dogtown #	24	30	11	316s	390w	607615.00	3565780.00
6185	Shell Oil Company #13 (Dogtown #	24	30	15	200n	200w	605880.00	3565660.00
6186	Shell Oil Company #24 (Dogtown #1	24	30	16	150n	2590e	605040.00	3565680.00
6188	Southern Production Company core t	24	30	20	100n	1320w	602925.00	3564040.00
6189	Shugart Federal 23 #1	24	30	23	660s	660w	607700.00	3562740.00
6190	Shell Oil Company #9 (Dogtown #4)	24	30	23	1606n	2294e	608415.00	3563670.00
6192	Shell Oil Company #10 (Dogtown #	24	30	27	336n	270e	607425.00	3562425.00
6198	USGS potash core test #13	24	31	5	330n	330e	613800.00	3568860.00
6199	Shell Oil Company #15	24	31	6	1098n	2193e	611580.00	3568630.00
6202	Shell Oil Company #4 (Federal G-NM	24	31	11	2531n	178e	618710.00	3566685.00
6204	1-13 Federal	24	31	13	1980s	1980e	619780.00	3564825.00
6210	Poker Lake Unit #43	24	31	21	660s	660w	614200.00	3562750.00
6213	Ramsey #1	24	31	33	2310n	2313e	614900.00	3560250.00
6215	Poker Lake Unit #2	25	30	1	660n	660e	610575.00	3559160.00
6217	Dog Town #2	25	31	2	100n	1500w	617700.00	3559350.00
6219	Pauley & Harrison #2	25	31	10	1980n	1980e	616635.00	3557160.00
6220	Pauley & Harrison #1	25	31	12	660n	660w	619075.00	3557590.00
6221	Pauley & Harrison PH-1	25	31	15	780n	1230w	616000.00	3555915.00

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
6479	Federal Hanagan D-4	24	32	11	1980n	1980w	627500.00	3566040.00
6487	Exxon A Federal No. 2	24	32	23	1650n	330w	627020.00	3563825.00
6488	Bon Durant Federal No. 1	24	32	24	330n	330w	628650.00	3564150.00
6489	Federal "BM" #1	24	32	25	1980n	1980w	629160.00	3562160.00
6490	#1 Payne	24	32	29	1980n	660w	622280.00	3562010.00
6494	Cotton Draw Unit #74	24	32	34	660s	1980w	625990.00	3559680.00
6577	Poker Lake State #3	25	30	8	1980s	660w	602860.00	3556530.00
6584	Poker Lake #44	25	30	10	2030n	2180e	606880.00	3557000.00
6585	Shugart Federal No. 1	25	30	12	1980n	1980w	609770.00	3557125.00
6589	Poker Lake Unit #11A-7	25	30	17	660s	660w	602860.00	3554200.00
6600	Marshall Federal #1	25	30	35	1980n	660e	609010.00	3550590.00
6601	Richardson & Bass Federal No. 1	25	30	35	660s	660w	607860.00	3549750.00
6606	Big Sinks Federal Unit #1	25	31	35	660n	1980e	618325.00	3551160.00
6705	J.D. Sena Jr.	25	32	28	2310s	990w	624070.00	3552135.00
6706	J.D. Sena U.S.A. No. 1	25	32	28	2310s	1650w	624270.00	3552135.00
6707	Cotton Draw Unit No. 58	25	32	29	1980n	330e	623670.00	3552425.00
6708	Cotton Draw Unit No. 55	25	32	29	330n	330e	623670.00	3552925.00
6714	Sunshine Royalties #1	25	32	34	660n	660e	626850.00	3551250.00
6715	Federal Sunshine Royalty #1	25	32	34	660n	660w	625610.00	3551250.00
9001	Outcrop						600900.00	3572800.00
9002	Outcrop						600300.00	3573400.00
9003	Outcrop						600300.00	3576000.00
9004	Outcrop						599600.00	3576100.00
9005	Outcrop						599200.00	3575300.00
9006	2130nw						600573.00	3598659.00
9007	2130ne						610305.00	3598750.00
9008	2130sw						600610.00	3588252.00
9009	2130se						610463.00	3588333.00
9010	2131sw						610463.00	3588265.00
9011	2131se						620110.00	3588374.00
9012	2132nw						620000.00	3598860.00
9013	2132se						629805.00	3588521.00
9014	2230sw						600765.00	3578525.00
9015	2230se						610571.00	3578667.00
9016	2231sw						610571.00	3578613.00

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Source Data Table-A for Task 1, Analysis Plan AP-088

IDNumber	Drillhole/Event Name	Township	Range	Section	Feet from the North/South Line	Feet from the East/West Line	UTMX (NAD 27)	UTMY (NAD 27)
9017	2231se						620220.00	3578712.00
9018	2232se						629939.00	3578883.00
9019	2330sw						600875.00	3568878.00
9020	2330se						610675.00	3569018.00
9021	2331sw						610675.00	3568957.00
9022	2331se						620282.00	3569061.00
9023	2332se						630073.00	3569225.00
9024	2430sw						600988.00	3559224.00
9025	2430se						610780.00	3559294.00
9026	2431se						620463.00	3559402.00
9027	2432se						630165.00	3559573.00

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
215	1081.1256	539	351	730	188
216	1055.8272	324	140	916	184
217	981.456				
218	978.408				
219	1075.944				
220	944.2704				
221	967.74				
222	1069.2384				
223	1102.7664		418	685	
224	972.9216		71	902	
225	975.36		67	908	
226	975.9696		61	915	
227	963.4728		98	865	
228	950.0616				
229	999.744				
230	1051.56	424	255	797	169
232	981.456	201	82	899	119
307	1060.704		158	903	
311	1069.848		186	884	
398	1092.708		393	700	
400	1084.1736		363	721	
452	1045.464	309	134	911	175
453	1045.464				
454	1064.0568	365	180	884	185
455	1055.5224	326	154	902	172
456	1087.2216	398	207	880	191
457	1074.1152	367			
458	1056.7416	342	149	908	193
459	1062.228	359	165	897	194
460	1063.752	345	152	912	193
461	1078.3824	376	183	895	193
462	1083.8688	387	201	883	186
500	1041.8064	315	113	929	202
501	1053.6936		131	923	
502	1050.036	329	122	928	207
503	1042.416	308	116	926	192
504	1045.464	324	125	920	199
505	1042.7208	303	147	896	156
507	1042.7208	302	119	924	183
508	1055.2176	321	152	903	169
510	998.22	212	76	922	136
523	1005.84				
550	997.9152	215	101	897	114
551	993.0384	266	128	865	138
552	982.3704	225			

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
583	966.216	201	70	896	131
584	1095.756	593	408	688	185
585	1101.852	619	424	678	195
586	1098.804		411	688	
588	1090.5744		366	725	
589	1078.992	497	311	768	186
590	1076.8584	492	304	773	188
591	1088.136		332	756	
592	1048.512				
593	1094.232	553	351	743	202
594	1075.6392		262	814	
595	1082.9544	472	283	800	189
596	1094.5368		287	808	
597	1077.468	421	290	787	131
598	1075.3344	466	280	795	186
599	1090.2696	463	277	813	186
600	1091.184		259	832	
601	1074.42		320	754	
602	1097.8896				
603	1089.66	438	249	841	189
604	1100.0232	464	271	829	193
605	1085.6976	437	239	847	198
606	1095.756	453	262	834	191
607	1097.8896	461	259	839	202
608	1085.088	450	268	817	182
609	1097.8896		260	838	
610	1097.8896	432	259	839	173
611	1074.7248	418	213	862	205
612	1099.1088	450	258	841	192
613	1084.7832	441	256	829	185
614	1053.9984	336	165	889	171
615	1065.276	408	223	842	185
616	1062.228	383	192	870	191
617	1074.42	407	223	851	184
618	1095.4512	439			
619	1065.5808	389	206	860	183
620	1059.18	395	204	855	191
623	1050.036	365	180	870	185
624	1061.3136	330	162	899	168
625	1049.4264	307	137	912	170
626	1024.128		158	866	
627	1060.704		171	890	
628	1077.468	387	204	873	183
629	1069.2384	357			
630	1068.6288	377	200	869	177

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
631	1072.896		177	896	
632	1022.604		155	868	
633	1078.3824	400	213	865	187
634	1079.2968	419	223	856	196
635	1088.136				
636	1102.1568	467	274	828	193
637	1071.372	392	210	861	182
638	1084.7832	426	231	854	195
640	1099.4136	462	274	825	188
641	1103.376	466	274	829	192
642	1100.328	463	256	844	207
643	1103.376	459	265	838	194
645	1083.564	480	291	793	189
646	1089.66		332	758	
649	1098.804		317	782	
650	1098.804	491	297	802	194
651	1097.28	473	287	810	186
652	1089.66	457	272	818	185
653	1100.0232	507	302	798	205
656	1097.28	446	262	835	184
657	1090.2696	436	250	840	186
660	1074.42	373	194	880	179
661	1063.752	346	171	893	175
662	1082.04		219	863	
663	1088.136		229	859	
664	1069.2384	356	182	887	174
665	1026.2616	290	160	866	130
666	1008.888				
667	1005.84				
668	996.696	250	122	875	128
669	1021.08				
670	1018.032	287	155	863	132
671	1014.984				
673	1071.372		207	864	
674	1058.2656	375	201	857	174
676	1031.748				
677	1078.992	406	229	850	177
678	1069.848	404	226	844	178
682	1104.9				
683	1109.472	512			
684	1103.376	495	302	801	193
685	1101.852	506	314	788	192
686	1066.8		219	848	
688	1059.18		204	855	
689	1053.9984	372	197	857	175

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
690	1046.988				
691	1042.416	363	183	859	180
692	1039.368				
693	1032.6624				
694	990.6	265	129	862	136
695	1015.8984	316	134	882	182
696	1039.0632	352	177	862	175
697	1045.464	394	213	832	181
698	1056.132	412	232	824	180
699	1062.228	387	226	836	161
700	1054.9128	381	216	839	165
702	972.0072	241			
703	966.216	245	98	868	147
704	968.6544	201			
707	964.692	218	82	883	136
737	962.5584	156	120	843	36
741	971.0928	166	61	910	105
742	984.8088	182	70	915	112
755	965.9112	192			
764	958.9008	216	82	877	134
766	950.0616	217	79	871	138
767	958.596		79	880	
769	964.0824		70	894	
770	959.8152	241	98	862	143
771	975.9696	273	125	851	148
773	1017.4224	347	168	849	179
774	1017.1176	345	158	859	187
783	949.452	214	66	883	148
784	937.5648	187			
785	941.832	204	37	905	167
786	932.688	180	34	899	146
787	933.2976	179	41	892	138
788	994.2576	284	107	887	177
789	961.9488	243	104	858	139
790	979.932	258	82	898	176
791	1007.364	315			
792	1004.316	300			
794	1024.4328	350			
795	1018.6416				
796	1014.3744				
797	1012.8504	326	143	870	183
798	1020.7752	352			
799	1018.6416				
800	1014.6792				
802	1032.6624	374	192	841	182

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
806	1016.8128	341			
807	1011.0216	329	149	862	180
808	1011.936				
809	1008.2784	315			
810	1008.888	351			
811	989.6856		84	906	
812	993.0384	281	91	902	190
813	1002.1824	294	104	898	190
814	1002.4872	308			
815	993.0384				
816	996.3912				
817	982.6752		84	899	
818	965.9112	236	70	896	166
819	1000.9632	286	101	900	185
820	983.8944	256	76	908	180
821	992.7336				
822	964.692				
850	951.2808		56	895	
851	957.9864		67	891	
852	952.1952		56	896	
853	955.2432		66	889	
854	950.976		57	894	
855	964.3872		73	891	
856	954.6336		67	888	
857	953.4144	219	58	895	161
858	967.1304	236	73	894	163
859	968.9592	247	73	896	174
860	958.2912	223	64	894	159
861	953.1096				
862	947.6232				
863	978.408	260	98	880	162
864	967.4352	238	70	897	168
865	984.8088				
866	998.8296	295	110	889	185
867	960.7296	231	62	899	169
868	980.8464				
870	1001.8776	301			
871	995.172	293			
873	1007.364	314	125	882	189
907	989.3808				
1072	1068.324	351	192	876	159
1095	1046.0736		166	880	
1096	1008.5832				
1097	1053.9984				
1098	1049.7312				

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1099	968.3496		89	879	
1103	1044.8544		192	853	
1104	1078.992	392	217	862	175
1105	1142.3904		540	602	
1106	1155.8016	732	555	601	177
1107	1156.1064		561	595	
1108	1139.952		560	580	
1109	1118.0064		471	647	
1110	1113.1296	625	440	673	185
1111	1158.24		529	629	
1112	1177.1376		560	617	
1113	1176.8328		559	618	
1114	1168.6032	746	561	608	185
1116	1157.6304	700	491	667	209
1137	921.4104		19	902	
1138	907.3896				
1142	1012.8504		168	845	
1143	979.6272		136	844	
1144	1023.5184	347	176	848	171
1145	1029.0048	376	194	835	182
1147	960.7296		57	904	
1149	1041.8064	444	251	791	193
1150	1048.2072	437	261	787	176
1151	1046.3784		254	792	
1152	1045.1592		249	796	
1153	1079.2968	450	258	821	192
1154	1082.9544	490	292	791	198
1155	1069.2384		274	795	
1156	1069.848	467	276	794	191
1158	1037.844	413	215	823	198
1159	1061.9232	441	251	811	190
1160	1058.2656	437	246	812	191
1161	1019.556	369	185	835	184
1162	1020.7752		187	834	
1163	1030.8336	396	197	834	199
1164	1053.6936		241	813	
1165	1044.2448	420	226	818	194
1166	1041.5016		223	819	
1167	1046.3784		230	816	
1168	1042.416	417	218	824	199
1169	1068.6288	474	279	790	195
1170	1080.8208	497	296	785	201
1172	1060.3992	493	278	782	215
1173	1069.2384	488	285	784	203
1174	1048.8168	444	238	811	206

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit: Base of Vaca Triste	Depths (m) from Reference Elevation to Stratigraphic Unit: Top of Culebra	Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
1175	1058.5704	454	253	806	201
1176	1060.0944	461	263	797	198
1177	1035.7104				
1178	1019.8608		166	854	
1179	1029.3096		191	838	
1180	1034.796		207	828	
1181	1019.556	364	166	854	198
1182	1022.2992	355	165	857	190
1183	1008.888	324	128	881	196
1184	1040.2824		226	814	
1185	1039.0632	430	225	814	205
1226	913.1808				
1227	922.6296				
1228	918.6672				
1229	921.7152				
1230	964.0824		72	892	
1231	974.4456				
1232	922.9344				
1234	979.932				
1236	1031.4432		149	882	
1237	1038.4536				
1239	1018.032	378	171	847	207
1240	1016.8128	378	172	845	206
1241	1016.508		150	867	
1242	1015.5936	354	152	864	202
1243	1014.3744	361	143	871	218
1244	1012.8504	360	153	860	207
1246	1070.1528	519	295	775	224
1247	1044.2448		251	793	
1248	1030.5288	411	200	831	211
1249	1028.3952	414	197	831	217
1250	1052.1696		287	765	
1251	1054.9128		288	767	
1252	1068.6288		320	749	
1253	1052.7792	490	283	770	207
1254	1055.8272	491	281	775	210
1255	1054.3032		280	774	
1256	1036.9296	421	207	830	214
1257	1028.3952				
1258	1023.5184	380	174	850	206
1259	1033.8816	433	190	844	243
1260	1064.0568		290		
1263	1134.7704	670	459	676	211
1264	1134.4656	652	449	685	203
1265	1103.9856		370	734	

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1266	1126.8456	615	417	710	198
1267	1127.4552		419	708	
1268	1128.0648	618	420	708	198
1269	1133.856	679	465	669	214
1270	1135.38	684	467	668	217
1271	1127.76	674	460	668	214
1272	1133.856	676	463	671	213
1273	1127.1504	674	457	670	217
1274	1129.284	671	461	668	210
1275	1115.2632	658	449	666	209
1276	1131.7224	671	456	676	215
1277	1123.7976	628	422	702	206
1278	1082.3448	533	320	762	213
1279	1117.3968		413	704	
1280	1106.1192	623	416	690	207
1281	1118.9208	664	443	676	221
1282	1125.9312	670	452	674	218
1283	1120.4448	679	459	661	220
1284	1127.76	664	450	678	214
1285	1125.3216	673	450	675	223
1286	1116.4824	641	434	682	207
1287	1124.4072	661	443	681	218
1288	1118.3112		454	664	
1289	1106.424	626	413	693	213
1290	1126.236	675	456	670	219
1291	1124.4072	688	455	669	233
1292	1116.7872	677	456	661	221
1296	1132.332	699	485	647	214
1297	1134.4656	674	471	663	203
1298	1135.6848	702	491	645	211
1299	1131.1128	686	472	659	214
1300	1133.856	686	472	662	214
1301	1131.7224	674	466	666	208
1302	1128.6744	679	470	659	209
1303	1131.7224		491	641	
1304	1128.0648	703	487	641	216
1305	1123.188	698	481		217
1306	1122.5784	697	482	641	215
1307	1115.2632	711	503	612	208
1323	904.6464				
1324	909.5232				
1325	908.6088				
1326	906.4752				
1327	897.3312				
1328	898.2456				

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1329	904.9512				
1330	896.4168	140			
1331	913.4856				
1332	891.2352				
1333	1050.6456		143	908	
1334	968.9592				
1335	1046.3784		180	866	
1336	1045.1592	348	198	847	150
1337	995.4768				
1338	1067.4096		325	742	
1339	1066.8	462	260	807	202
1340	1046.0736		212	834	
1341	1047.2928	421	210	837	211
1342	1038.1488		203	835	
1343	1040.5872	413	198	843	215
1344	1045.464	388	201	844	187
1345	1047.9024		213	835	
1346	1077.468	404	241	836	163
1347	1075.3344	506	301	774	205
1348	1082.9544	508	285	798	223
1349	1082.9544		259	824	
1350	1071.0672	391	238	833	153
1351	1075.944	409	244	832	165
1352	1063.752	382	222	842	160
1353	1077.468	411	241	836	170
1354	1082.3448		266	816	
1355	1067.4096				
1356	1069.2384		252	817	
1357	1103.376	640	430	673	210
1358	1104.2904				
1359	1107.0336		411	696	
1360	1106.7288	636	423	684	213
1361	1092.4032	543	332	760	211
1362	1105.8144	599	380	726	219
1363	1101.852				
1364	1104.2904				
1365	1108.5576				
1366	1108.5576				
1367	1108.5576	633	412	697	221
1368	1109.472		412	697	
1369	1099.1088	656			
1370	1097.28				
1371	1098.804	629	411	688	218
1372	1093.0128		412	681	
1373	1096.9752				

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1374	1105.8144	641	395	711	246
1375	1093.6224	618	391	703	227
1376	1094.5368	655	397	698	258
1377	1104.5952	634	399	706	235
1378	1099.1088	637	392	707	245
1379	1094.5368	611	389	706	222
1380	1097.8896	578	363	735	215
1381	1103.9856	596	378	726	218
1382	1099.7184	596	370	730	226
1383	1098.804	607	379	720	228
1384	1102.7664	575	355	748	220
1385	1099.4136	602	372	727	230
1386	1098.4992	602	374	724	228
1387	1097.8896	600	373	725	227
1388	1094.5368	593	366	729	227
1389	1100.0232	616	384	716	232
1390	1098.804	607	382	717	225
1391	1093.9272	578	358	736	220
1392	1083.2592	517	283	800	234
1393	1069.848	523	305	765	218
1394	1072.5912	537	321	752	216
1395	1074.1152	554	326	748	228
1396	1104.9	708	488	617	220
1397	1099.1088	665	443	656	222
1398	1096.6704	663	440	657	223
1399	1098.1944	659	439	659	220
1400	1094.232	668	443	651	225
1401	1108.2528	671	447	661	224
1402	1081.1256	661	446	635	215
1403	1090.5744	666	447	644	219
1404	1108.5576	685	463	646	222
1405	1096.6704	717	488	609	229
1406	1083.2592		422	661	
1407	1094.8416	677	453	642	224
1408	1078.992	646	407	672	239
1409	1095.4512	730	458	637	272
1410	1067.4096	678	444	623	234
1411	1074.42	640	401	673	239
1412	1083.8688	607	378	706	229
1413	1074.1152	605	374	700	231
1414	1064.0568	690	461		229
1425	909.828		45	865	
1427	890.9304	201			
1428	950.3664				
1429	926.8968				

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1430	938.1744				
1431	927.8112				
1432	911.352				
1433	894.8928				
1434	897.636				
1436	997.6104		314	684	
1437	1000.6584				
1438	982.0656	293	171	811	122
1445	1011.0216	431	268	743	163
1448	977.4936	322	187	790	135
1449	980.5416				
1450	978.1032	329	202	776	127
1451	971.0928	431	270	701	161
1453	977.4936		415	562	
1455	976.2744		250	726	
1456	970.4832	340			
1457	976.5792	364			
1459	1016.8128		379	638	
1460	1059.4848	399	257	802	142
1461	1020.4704		308	712	
1463	1011.6312	634			
1464	1062.5328	517	298	765	219
1465	1054.9128	468	300	755	168
1466	1054.9128		287	768	
1467	1054.608	475	297	758	178
1468	1058.2656	490	294	764	196
1469	1060.0944	500	295	765	205
1470	1060.704	492	296	765	196
1472	1055.8272	491	295	761	196
1473	1052.7792	486	293	760	193
1474	1054.3032	488	299	755	189
1475	1053.084	484	294	759	190
1476	1053.9984	488	299	755	189
1477	1057.656	485	296	762	189
1478	1039.368		311	728	
1479	1057.0464	520	302	755	218
1480	1050.036	499	289	761	210
1481	1052.7792	514	297	756	217
1482	1053.084	482	293	760	189
1483	1044.5496	451	290	755	161
1484	1051.8648	466	300	752	166
1485	1047.9024	458	295	753	163
1486	1051.8648	482	294	758	188
1487	1052.4744		294	758	
1488	1052.4744	470	300	752	170

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1489	1048.8168	457	287	762	170
1490	1050.6456	474	293	758	181
1491	1049.4264	466	299	750	167
1492	1048.8168	463	297	752	166
1493	1042.7208	430	275	768	155
1494	1049.7312	462	293	757	169
1495	1043.3304	436	279	764	157
1496	1048.2072	456	291	757	165
1497	1047.5976	440	287	761	153
1499	1053.9984	471	293	761	178
1500	1039.6728	422	273	767	149
1501	1046.6832	444	287	760	157
1502	1049.7312	456	290	760	166
1503	1046.6832	438	285	762	153
1504	1046.3784	442	290	756	152
1505	1049.4264	457	293	756	164
1507	1047.9024		255	793	
1508	1034.4912	424	276	758	148
1509	1037.2344	446	286	751	160
1510	1035.7104	429	284	752	145
1511	1035.1008	430	279	756	151
1512	1037.844	437	283		154
1513	1040.5872	431	276	765	155
1514	1038.1488	448	287	751	161
1515	1040.2824	445	289	751	156
1516	1043.0256	446	287	756	159
1517	1037.5392	439	293	745	146
1519	1036.32	443	290	746	153
1520	1037.5392	422	272	766	150
1521	1038.7584	415	267	772	148
1522	1042.7208	448	280	763	168
1523	1044.8544	446	288	757	158
1524	1045.464	451	289	756	162
1525	1039.0632	442	283	756	159
1526	1042.1112	451	287	755	164
1527	1042.1112	449	284	758	165
1528	1039.6728	448	285	755	163
1529	1042.7208	454	290	753	164
1530	1040.5872	454	290	751	164
1531	1045.1592	491	283	762	208
1533	1033.5768	452	293	741	159
1534	1033.8816	445	300	734	145
1535	1032.6624	440	283	750	157
1536	1028.7	473	327	702	146
1537	1035.7104	446	293	743	153

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1539	1030.8336	448	303	728	145
1540	1032.0528	443	293	739	150
1541	1040.5872	461	317	724	144
1542	1027.176	490	347	680	143
1543	1022.9088		335	688	
1544	1025.9568		401	625	
1545	1009.1928		379	630	
1546	1007.9736	542	377	631	165
1547	1020.7752	474	344	677	130
1548	1015.5936	534	381	635	153
1549	1019.8608	522	373		149
1550	1063.752	688	459	605	229
1551	1060.0944	623	383	677	240
1552	1053.3888	607	384	669	223
1553	1043.6352	649	418	626	231
1554	1065.8856	574	351	715	223
1555	1045.7688	593	361	685	232
1556			368		
1557	1033.8816		361	673	
1558	1021.9944	602	374	648	228
1559	1023.5184	622	391	633	231
1560	1018.6416	610	383	636	227
1561	1015.5936	599	369	647	230
1562	1011.936	593	370	642	223
1563	1021.9944	567	348	674	219
1564	1019.2512	571	356	663	215
1565	1043.0256	596	357	686	239
1566	1032.0528	489	283	749	206
1567	1015.5936	533	318	698	215
1568	1033.5768	546	326	708	220
1569	1013.46	584	357	656	227
1570	1019.8608	609	381	639	228
1628	1174.3944	858	671	503	187
1629	1140.2568	735	523	617	212
1630	1060.704		262	799	
1631	1115.2632	670	447	668	223
1632	1088.7456	612	408	681	204
1633	1110.996	536	339	772	197
1634	943.0512				
1635	1100.9376	727	502	599	225
1636	1068.6288		424	645	
1637	904.6464				
1638	1053.3888	326			
1639	1135.6848	679	467	669	212
1641	1039.368		214	825	

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
1642	1031.4432		215	816	
1643	1040.2824		210	830	
3000	999.298992				
3001	1042.1112				
3002	1033.040352		207		
3003	1046.62224				
3004	1124.312712				
3005	1039.371048		220		
3006	1041.53208		226		
3007	1020.1656		128	892	
3008	1041.37968		213		
3009	1055.03472		247		
3010	1060.746672		257		
3011	1045.6164		233		
3012	1030.71168		198		
3013	1024.67664		177		
5000	1099.4136	446	254	845	192
5002	1092.708	436	242	851	194
5004	1089.66	431	240	850	191
5005	1092.0984	435	247	845	188
5006	1098.4992	447			
5007	1088.136	430	243	845	187
5008	1087.5264	433	251	837	182
5009	1094.232	441	253	841	188
5010	1097.28	449	256	841	193
5011	1100.0232	445			
5012	1096.9752	447	255	842	192
5014	1086.3072	432	243	843	189
5015	1090.8792	482	288	803	194
5016	1096.9752	477	285	812	192
5019	1090.2696	457	265	825	192
5020	1085.088	443	255	830	188
5021	1095.756	477			
5022	1090.2696	456	265	825	191
5023	1087.2216	442	256	831	186
5024	1098.804	479	282	817	197
5025	1098.4992	467	274	824	193
5027	1110.0816	489	294	816	195
5028	1099.4136	494	296	803	198
5029	1105.2048	512	309	796	203
5030	1093.0128	506	302	791	204
5032	1091.7936	490	294	798	196
5033	1089.9648	493	297	793	196
5034	1087.8312	496	297	791	199
5035	1088.136	489	294	794	195

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5036	1087.8312	492	296	792	196
5037	1088.7456	482	290	799	192
5038	1094.8416	519	310	785	209
5039	1088.7456	506	302	787	204
5040	1082.9544	494	294	789	200
5041	1085.3928	491	293	792	198
5042	1097.5848	522	313	785	209
5043	1089.3552	502	299	790	203
5044	1096.9752	521	311	786	210
5045	1099.4136	517	309	790	208
5046	1080.8208	517	304	777	213
5047	1096.6704	530	317	780	213
5048	1091.184	507	303	788	204
5049	1100.328	527	315	785	212
5050	1083.8688	511	299	785	212
5051	1089.9648	511	305	785	206
5052	1083.8688	498	299	785	199
5053	1092.708	516	308	785	208
5054	1074.7248	489	290	785	199
5055	1080.8208	502	293	788	209
5056	1061.3136	490	276	785	214
5057	1063.1424	505	288	775	217
5059	1013.1552	263	110	903	153
5060	1010.412	265	107	903	158
5061	990.6				
5062	959.8152	172	69	891	103
5063	980.2368	225	79	901	146
5064	983.8944	263	123	861	140
5065	980.8464	243	102	879	141
5066	992.4288	283	138	854	145
5068	1118.9208	457	262	857	195
5069	1105.5096	439	252	854	187
5070	1102.4616	436	259	843	177
5071	1098.1944	437	247	851	190
5072	1098.4992	438	247	851	191
5073	1087.2216	410	233	854	177
5075	1090.5744	424	239	852	185
5076	1094.5368	432	244	851	188
5079	1112.52	509	310	803	199
5080	1114.044	511	312	802	199
5081	1122.2736	501	310	812	191
5082	1130.5032	496	314	817	182
5084	1021.6896	351	162	860	189
5085	1011.6312	327	141	871	186
5086	1023.2136	339	151	872	188

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5087	1009.4976	307			
5088	1094.232	438	245	849	193
5089	1010.1072	317	134	876	183
5090	1019.2512	336	146	873	190
5091	976.2744	233			
5092	974.4456	273	126	848	147
5093	967.4352	259	116	851	143
5094	985.1136	274	128	857	146
5095	983.8944	279	126	858	153
5096	973.5312	265	114	860	151
5097	968.9592	256	110	859	146
5098	971.7024	267	122	850	145
5099	980.5416	280			
5100	985.1136	290	120	865	170
5101	971.3976	269	124	847	145
5102	973.2264	270	125	848	145
5103	1024.4328	371	189	835	182
5104	1014.984	337	146	869	191
5105	1016.8128	345	156	861	189
5106	1012.5456	333	143	870	190
5107	1016.8128	340	155	862	185
5109	1012.2408	330	143	869	187
5110	1019.2512	341	157	862	184
5111	986.9424	276	144	843	132
5112	983.8944	292	144	840	148
5113	1005.84	349	133	873	216
5114	1007.364	322	132	875	190
5115	971.3976	266	124	847	142
5116	1014.0696	315	123	891	192
5117	1017.7272	336	149	869	187
5118	1014.0696	324	132	882	192
5119	1013.1552	321	128	885	193
5120	1013.1552	325	140	873	185
5121	1019.556	330	142	878	188
5122	981.7608	293	147	835	146
5123	1014.0696	351	137	877	214
5124	1033.5768	368	181	853	187
5125	1024.7376	347	162	863	185
5126	1043.94	387	205	839	182
5127	1010.412	350	121	889	229
5128	1011.3264	295	110	901	185
5129	1009.1928	311			
5130	956.1576	218			
5131	1002.792	291	101	902	190
5132	1075.944	529	318	758	211

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5133	1064.3616	501	294	770	207
5134	1027.7856	399	195	833	204
5135	1025.9568	398	189	837	209
5136	1021.6896	390	180	842	210
5137	1024.7376	393	184	841	209
5138	1023.2136	392	184	839	208
5139	1027.7856	399	193	835	206
5140	1027.7856	401	193	835	208
5141	1012.5456	387	181	832	206
5142	1011.0216	372	172	839	200
5143	1012.5456	376	173	840	203
5144	1014.0696	380	173	841	207
5145	1014.6792	381	177	838	204
5146	1024.128	386	177	847	209
5147	1014.0696				
5148	1017.7272	365			
5149	1014.0696	337	138	876	199
5150	1015.5936	335	135	881	200
5151	1017.4224	352			
5152	1014.984	347	147	868	200
5153	1052.4744	488	271	781	217
5154	1071.9816	520	308	764	212
5155	1064.9712	511	296	769	215
5158	1116.7872	552	341	776	211
5159	1121.0544	554	344	777	210
5160	1110.6912	541	335	776	206
5161	1135.38	566	344	791	222
5162	1140.5616	558	335	806	223
5163	1144.8288	562	347	798	215
5164	1147.8768	561	351	797	210
5165	1137.2088	561	347	790	214
5166	1141.476	570	346	795	224
5167	1142.6952	535	340	803	195
5168	1157.0208	524	330	827	194
5169	1149.4008	527	332	817	195
5170	1159.1544	529	336	823	193
5171	1141.7808	524	325	817	199
5173	1133.2464	535	328	805	207
5174	1140.8664	525	328	813	197
5175	1137.8184	523	328	810	195
5176	1152.144	522	326	826	196
5177	1144.2192	526	326	818	200
5179	1132.9416	535	330	803	205
5180	1141.1712	519	323	818	196
5181	1130.1984	532	329	801	203

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5182	1153.0584	524	325	828	199
5183	1146.3528	519	317	829	202
5184	1156.716	516	320	837	196
5185	1128.0648	524	326	802	198
5186	1135.9896	518	317	819	201
5188	1135.9896	518	318	818	200
5189	1111.3008	509	310	801	199
5190	1135.6848	528	326	810	202
5191	1109.472	539	329	780	210
5192	1121.0544	552	339	782	213
5193	1130.5032	541	334	797	207
5194	1128.3696	546	338	790	208
5195	1123.7976	547	336	788	211
5196	1130.5032	553	339	792	214
5197	1130.5032	535	330	801	205
5198	1128.6744	564	354	775	210
5199	1139.952	558	348	792	210
5200	1145.4384	560	349	796	211
5201	1150.0104	570	354	796	216
5202	1146.6576	576	351	796	225
5203	1146.9624	559	349	798	210
5204	1148.1816	561	351	797	210
5206	1137.5136	559	350	788	209
5208	1156.1064	607	392	764	215
5209	1142.0856	586	376	766	210
5210	1134.7704	617	402	733	215
5211	1125.9312	567	357	769	210
5212	1113.4344	580	370	743	210
5214	1118.9208	580	370	749	210
5216	1108.5576	555	339	770	216
5217	1078.3824	543	325	753	218
5218	1078.992	543	325	754	218
5219	1067.1048	519	304	763	215
5220	1082.04	553	336	746	217
5221	1126.5408	616	402	725	214
5223	1128.6744	629	415	714	214
5224	1134.7704	628	415	720	213
5226	1135.6848	679	463	673	216
5227	1088.4408	582	372	716	210
5228	1086.9168	526	343	744	183
5229	1126.5408	580	390	737	190
5230	1141.7808	620	405	737	215
5231	1121.9688	589	386	736	203
5232	1110.996	536	338	773	198
5233	1133.5512	550	343	791	207

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5234	1113.1296	520	324	789	196
5235	1109.472	547	329	780	218
5236	1110.3864	671	443	667	228
5237	1106.424	544	341	765	203
5238	1107.0336	644	416	691	228
5239	1101.5472	579	361	741	218
5240	1106.7288	562	332	775	230
5241	1121.664	680	448	674	232
5242	1115.8728	684	472	644	212
5243	1115.2632	639	448	667	191
5244	1115.8728	671	442	674	229
5245	1144.2192	678	465	679	213
5246	1135.9896	635	433	703	202
5247	1125.0168	614	405	720	209
5248	1079.6016	538	326	754	212
5249	1082.6496	541	329	754	212
5250	1127.4552	625	421	706	204
5251	1126.8456	622	421	706	201
5252	1138.7328	664	451	688	213
5253	1143	673	463	680	210
5254	1138.428	648	456	682	192
5255	1139.952	672	460	680	212
5256	1137.5136	673	465	673	208
5257	1131.1128	682	469	662	213
5258	1108.2528	666	452	656	214
5259	1128.9792	701	488	641	213
5260	1138.1232	708	492	646	216
5261	1134.4656	693	483	651	210
5262	1136.2944	709	494	642	215
5263	1102.1568	656	442	660	214
5264	1168.908	753	566	603	187
5265	1152.144	432	302	850	130
5266	1138.1232	505	307	831	198
5267	1149.4008	485	291	858	194
5268	1145.4384	513	310	835	203
5269	1129.8936	560	347	783	213
5270	1123.7976	611	384	740	227
5271	1123.188	572	350	773	222
5272	1125.0168	466	278	847	188
5273	1123.7976	459	266	858	193
5274	1103.0712	444	253	850	191
5275	1115.2632	459	265	850	194
5276	1116.1776	459	265	851	194
5277	1129.284	512	316	813	196
5278	1126.8456	576	357	770	219

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5279	1134.7704	605	386	749	219
5280	1130.5032	524	328	803	196
5301	1000.0488				
5302	979.6272	243	101	879	142
5303	995.7816	284	116	880	168
5304	1120.14	463	275	845	188
5305	1082.9544	407	226	857	181
5306	1071.372	396	221	850	175
5307	1106.1192	440	255	851	185
5308	1094.232	418	241	853	177
5309	1197.5592	777	585	613	192
5310	1109.472	557	356	753	201
5311	1115.8728				
5312	1121.3592	600	391	730	209
5313	1131.4176	597	386	745	211
5314	1138.7328	631	430	709	201
5315	1138.428	646	418	720	228
5316	1131.4176	588	376	755	212
5317	1148.4864	484	296	852	188
5318	1046.988		154	893	
5319	1007.0592		88	919	
5320	1014.984				
5321	996.0864				
5322	1020.4704	338	149		189
5323	1023.8232	362	178	846	184
5324	1008.5832	310			
5325	1008.888	308	118	891	190
5326	1092.4032	428	239	853	189
5327	1088.7456	417	236	853	181
5328	1093.6224	438	243	851	195
5329	1080.2112	441	258	822	183
5330	1087.8312	428	240	848	188
5331	1085.6976	417	242	844	175
5332	1080.516	435	245	836	190
5333	1078.0776	438	249	829	189
5334	1086.3072	435	248	838	187
5335	1023.5184	363	174		189
5336	1029.6144	382	197	833	185
5337	1090.8792	476	286	805	190
5338	1096.9752	478	283	814	195
5339	1094.232	453	262	832	191
5340	1094.8416	501	304	791	197
5341	1103.9856	515	314	790	201
5342	1065.5808				
5343	1096.0608	523	309	787	214

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5344	1092.708	521	308	785	213
5345	1160.3736	482	287	873	195
5346	1160.9832	485	304	857	181
5347	1163.1168	501	293	870	208
5348	1136.904	458	263	874	195
5349	1104.9	457	263	842	194
5350	1103.0712	443	251	852	192
5351	1114.044	442	244	870	198
5352	1114.3488	496	301	813	195
5353	1160.0688				
5354	1159.764	495	300	860	195
5355	1163.7264	503	309	855	194
5356	1160.0688	503	308	852	195
5357	1161.288	497	302	859	195
5358	1159.764				
5359	1145.7432				
5360	1141.7808	567	357	785	210
5361	1142.6952	593	358	785	235
5362	1146.048	592	360	786	232
5363	1133.2464	562	343	790	219
5364	1143.3048	583	354	789	229
5365	1133.5512	528	324	810	204
5366	1132.6368	530	327	806	203
5367	1126.5408	533	332	795	201
5368	1103.376	539	325	778	214
5369	1130.1984	534	331	799	203
5370	1131.1128	558	348	783	210
5371	1124.1024	561	351	773	210
5372	1145.1336	572	347	798	225
5373	1145.7432	556	350	796	206
5374	1142.3904	580	369	773	211
5375	1139.6472	556	347	793	209
5376	1133.2464	564	354	779	210
5377	1136.5992	559	351	786	208
5378	1143.9144	557	351	793	206
5380	1147.2672	645	436	711	209
5381	1151.2296	646	436	715	210
5382	1154.8872	606	393	762	213
5383	1125.9312	580	371	755	209
5384	1122.8832	590	380	743	210
5385	1119.2256	566	358	761	208
5386	1120.4448	566	352	768	214
5387	1122.8832	598	387	736	211
5389	1110.0816	555	336	774	219
5390	1117.3968	593	383	734	210

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
5391	1122.5784	617	403	720	214
5392	1123.4928	608	397	726	211
5393	1139.6472	647	436	704	211
5394	1151.2296	649	437	714	212
5395	1150.0104	653	439	711	214
5396	1146.3528	659	451	695	208
5397	1147.8768	650	438	710	212
5398	1110.996	655	426	685	229
5399	1088.7456	612	408	681	204
5400	1088.7456	637	421	668	216
5401	1116.7872	564	360	757	204
5402	1093.3176	576	369	724	207
5501	1059.18	430	247	812	183
5502	1055.8272	430	247	809	183
5503	1052.7792	426	245	808	181
5504	1059.7896	417	239	821	178
5505	1051.2552	417	236		181
5506	1053.6936	415	233	821	182
5507	1073.0484	422	239	834	183
5508	1061.9232	419	242	820	177
5509	1069.32984	428	247	822	181
5510	1063.1424	427	250	813	177
5511	1064.6664	411	239	826	172
6122	954		77.7	876.3	
6144	905		10.7	894.3	
6145	905.3		12.2	893.1	
6146	912.9		6.1	906.8	
6147	908.3		25.6	882.7	
6148	907.7		7.6	900.1	
6149	916.5		5.8	910.7	
6151	901.6		12.2	889.4	
6155	918.1		16.8	901.3	
6156	908.3		1.8	906.5	
6157	926		21.9	904.1	
6158	941.8		13.7	928.1	
6161	987.9		86.9	901	
6162	988.8		96.9	891.9	
6163	988.8		91.4	897.4	
6164	955.9		18.3	937.6	
6165	935.7		22.9	912.8	
6168	1001		94.5	906.5	
6169	986		66.8	919.2	
6170	934.8		31.1	903.7	
6171	956.8		34.7	922.1	
6172	986		70.7	915.3	

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
6173	1022.6		145.7	876.9	
6177	913.2		24.1	889.1	
6179	896.4		9.8	886.6	
6180	1062.2		179.2	883	
6181	1016.5		86	930.5	
6182	986		173.4	812.6	
6183	1020.5		116.1	904.4	
6184	1047.9		156.7	891.2	
6185	1022.6		123.1	899.5	
6186	1013.5		185.6	827.9	
6188	979		133.2	845.8	
6189	1037.8		194.2	843.6	
6190	1046.1		178.3	867.8	
6192	1031.4		256.9	774.5	
6198	1031.4		190.5	840.9	
6199	1038.8		211.8	827	
6202	1075.6		301.8	773.8	
6204	1096.4		282.9	813.5	
6210	1066.2		238.7	827.5	
6213	1051.6		213.7	837.9	
6215	1041.8		248.7	793.1	
6217	1057.7		242.9	814.8	
6219	1036.3		187.5	848.8	
6220	1051		252.4	798.6	
6221	1027.8		271.3	756.5	
6479	1106.4		399.6	706.8	
6487	1097		381.6	715.4	
6488	1088.6		390.3	698.3	
6489	1086.6		369.3	717.3	
6490	1072.6		265.8	806.8	
6494	1069.5		315.5	754	
6577	972.9			972.9	
6584	1006.8		264.1	742.7	
6585	1025		338.3	686.7	
6589	975.4			975.4	
6600	1003.4		303.3	700.1	
6601	983.9		403.9	580	
6606	1012.9		339.2	673.7	
6705	1023.8		344.1	679.7	
6706	1025.7		323.4	702.3	
6707	1019.3		332.5	686.8	
6708	1026.6		289.9	736.7	
6714	1025.3		283.5	741.8	
6715	1024.1		292.6	731.5	
9001				920	

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Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste
		Base of Vaca Triste	Top of Culebra		
9002				914	
9003				910	
9004				908	
9005				908	
9006					
9007					
9008					
9009					
9010					
9011					
9012					
9013					
9014					
9015					
9016					
9017					
9018					
9019					
9020					
9021					
9022					
9023					
9024					
9025					
9026					
9027					

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Halite Depth Relative to Culebra in Potash Drillholes
Task 1, AP-088

ID #	UTMX	UTMY	Base of Culebra (ft)	First Report of Salt (ft)	Depth (ft) to salt below (+) or above (-) base of Culebra	Depth (m) to salt below (+) or above (-) base of Culebra
400	618315.84	3598861.13	1220.00	920.00	-300.00	-91
593	618338.90	3597611.78	1180.00	890.00	-290.00	-88
584	619840.65	3598695.43	1360.00	1080.00	-280.00	-85
591	617426.10	3598596.52	1120.00	860.00	-260.00	-79
601	616703.96	3598332.96	1030.00	820.00	-210.00	-64
398	619138.74	3598851.04	1310.00	1120.00	-190.00	-58
588	618790.96	3598422.21	1220.00	1080.00	-140.00	-43
594	616396.03	3597622.49	880.00	760.00	-120.00	-37
597	616787.39	3597175.42	970.00	900.00	-70.00	-21
215	617001.49	3600704.27	1175.00	1120.00	-55.00	-17
589	617610.09	3597195.81	1040.00	990.00	-50.00	-15
642	615204.31	3595695.09	850.00	820.00	-30.00	-9
223	620852.16	3597764.64	1390.00	1390.00	0.00	0
585	619994.69	3597210.72	1410.00	1410.00	0.00	0
586	619999.17	3597713.59	1370.00	1370.00	0.00	0
600	615501.00	3596984.53	930.00	930.00	0.00	0
646	618614.60	3596165.93	1110.00	1110.00	0.00	0
684	618524.08	3592363.56	1020.00	1020.00	0.00	0
608	614344.27	3597990.59	898.00	903.00	5.00	2
664	613588.10	3594641.22	622.00	630.00	8.00	2
598	615989.82	3598008.50	945.00	955.00	10.00	3
599	615192.54	3597576.86	930.00	940.00	10.00	3
613	613501.52	3598739.58	865.00	875.00	10.00	3
623	611497.63	3597546.13	620.00	630.00	10.00	3
645	616899.67	3596277.11	980.00	990.00	10.00	3
653	618396.85	3593216.08	1015.00	1025.00	10.00	3
605	613971.07	3596754.01	810.00	830.00	20.00	6
656	615984.88	3593924.79	890.00	910.00	20.00	6
607	614401.55	3598577.60	865.50	886.84	21.34	7
609	614413.46	3596672.97	877.00	901.50	24.50	7
595	615995.30	3597132.38	945.00	970.00	25.00	8
638	614586.93	3595736.95	778.00	803.00	25.00	8
651	617465.63	3594711.17	965.00	990.00	25.00	8
652	616873.29	3593183.70	914.00	940.00	26.00	8
632	612078.64	3594791.78	515.00	543.75	28.75	9
606	614372.51	3597129.85	880.00	910.00	30.00	9
625	611175.23	3595494.67	470.00	500.00	30.00	9
641	615299.83	3596259.48	910.00	940.00	30.00	9
677	615449.39	3593052.90	770.00	800.00	30.00	9
685	619284.17	3592650.21	1050.00	1080.00	30.00	9
230	608446.71	3604178.19	856.00	894.00	38.00	12
452	610123.89	3596707.10	460.00	500.00	40.00	12

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Halite Depth Relative to Culebra in Potash Drillholes

ID #	UTMX	UTMY	Base of Culebra (ft)	First Report of Salt (ft)	Depth (ft) to salt below (+) or above (-) base of Culebra	Depth (m) to salt below (+) or above (-) base of Culebra
596	616045.82	3596363.19	960.00	1000.00	40.00	12
631	612391.81	3595883.22	600.00	640.00	40.00	12
649	620027.17	3593233.88	1050.00	1090.00	40.00	12
660	614384.94	3593922.41	650.00	690.00	40.00	12
797	607623.88	3582231.16	500.00	540.00	40.00	12
505	608188.43	3595536.95	514.00	560.00	46.00	14
610	612082.54	3596605.07	870.00	920.00	50.00	15
640	616020.30	3595570.68	930.00	980.00	50.00	15
678	616078.91	3592287.34	760.00	810.00	50.00	15
662	614908.10	3594329.48	740.00	795.00	55.00	17
455	607916.26	3596419.02	520.00	580.00	60.00	18
630	612785.63	3596259.00	680.00	740.00	60.00	18
634	614105.01	3596046.30	750.00	812.00	62.00	19
637	613703.18	3595731.42	710.00	778.42	68.42	21
307	613359.54	3605595.59	540.00	610.00	70.00	21
311	613196.41	3595141.61	630.00	700.00	70.00	21
459	605891.19	3597396.79	560.00	630.00	70.00	21
626	611596.68	3595108.75	530.00	600.00	70.00	21
627	611591.77	3595893.45	580.00	650.00	70.00	21
633	614410.04	3594783.49	720.00	790.00	70.00	21
657	615408.39	3594736.40	840.00	910.00	70.00	21
673	614542.69	3593062.48	690.00	760.00	70.00	21
603	614400.13	3596368.14	838.00	910.00	72.00	22
863	606521.92	3579344.43	350.00	424.40	74.40	23
615	612752.10	3597965.39	750.00	830.00	80.00	24
617	613561.95	3596385.75	750.00	830.00	80.00	24
628	613153.42	3595926.07	690.00	770.00	80.00	24
696	612841.19	3589806.25	600.00	680.00	80.00	24
619	613087.75	3596679.92	695.00	780.00	85.00	26
661	613673.52	3593163.71	590.00	680.00	90.00	27
663	615080.46	3593568.68	770.00	860.00	90.00	27
686	617479.23	3590094.24	740.00	830.00	90.00	27
807	608537.88	3581048.34	530.00	620.00	90.00	27
788	605622.33	3581883.47	382.00	472.25	90.25	28
700	615316.96	3589859.80	738.00	829.00	91.00	28
620	612259.48	3597550.90	680.00	771.67	91.67	28
616	612766.16	3596936.95	650.00	744.00	94.00	29
691	613868.30	3590033.61	625.00	720.00	95.00	29
604	614976.33	3596821.25	915.00	1011.00	96.00	29
227	605117.70	3587061.02	380.00	480.00	100.00	30
456	607911.25	3598437.95	710.00	810.00	100.00	30
508	607553.29	3595982.48	520.00	620.00	100.00	30
510	608915.23	3593834.90	290.00	390.00	100.00	30
636	614812.63	3596195.49	920.00	1020.00	100.00	30
699	616200.75	3589857.70	760.00	860.00	100.00	30
811	605692.30	3580436.35	304.00	410.00	106.00	32

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Halite Depth Relative to Culebra in Potash Drillholes

ID #	UTMX	UTMY	Base of Culebra (ft)	First Report of Salt (ft)	Depth (ft) to salt below (+) or above (-) base of Culebra	Depth (m) to salt below (+) or above (-) base of Culebra
612	613463.34	3597535.57	870.00	977.00	107.00	33
866	607217.78	3580156.34	375.00	482.00	107.00	33
611	613345.06	3596955.81	720.00	830.00	110.00	34
695	610601.36	3589792.27	480.00	590.00	110.00	34
790	604431.59	3582241.74	300.00	410.00	110.00	34
454	609172.24	3597813.48	610.00	722.50	112.50	34
802	610096.93	3582718.93	640.00	759.00	119.00	36
500	606148.22	3595280.40	400.00	520.00	120.00	37
694	610504.32	3590690.67	450.00	570.00	120.00	37
789	604815.19	3583036.48	360.00	480.00	120.00	37
771	607641.89	3585453.99	440.00	560.80	120.80	37
773	609361.35	3584611.41	580.00	704.00	124.00	38
458	606025.94	3596559.57	510.00	634.10	124.10	38
851	605238.90	3579839.27	240.00	366.00	126.00	38
216	607180.03	3595972.53	480.00	610.00	130.00	40
767	604103.87	3585927.14	290.00	420.00	130.00	40
769	604198.63	3586613.41	290.00	420.00	130.00	40
867	605809.68	3578715.26	226.25	365.50	139.25	42
688	616065.81	3590725.40	690.00	830.00	140.00	43
856	604477.15	3579819.29	260.00	400.00	140.00	43
860	604078.72	3580182.51	240.00	381.50	141.50	43
850	604905.87	3579486.74	209.85	351.80	141.95	43
462	606723.40	3598331.47	690.00	832.00	142.00	43
502	605606.27	3595444.62	410.00	553.00	143.00	44
854	604967.29	3579410.93	209.80	353.50	143.70	44
855	605267.19	3580189.91	261.00	405.00	144.00	44
858	604855.79	3580187.34	270.00	414.67	144.67	44
817	605310.33	3580601.58	305.00	450.00	145.00	44
764	604756.81	3586289.29	320.00	470.00	150.00	46
852	604937.48	3579304.09	208.30	360.00	151.70	46
504	605800.91	3595994.38	450.00	603.00	153.00	47
859	605632.96	3580176.95	260.00	416.00	156.00	48
873	609279.50	3579407.31	440.00	596.10	156.10	48
741	602073.88	3587697.24	250.00	408.00	158.00	48
583	606443.41	3589492.04	270.00	429.00	159.00	48
232	605833.39	3593236.62	290.00	450.00	160.00	49
460	606429.14	3596653.52	510.00	670.00	160.00	49
461	606842.77	3597517.02	620.00	780.00	160.00	49
707	605551.99	3587056.11	310.00	470.00	160.00	49
766	604070.53	3585165.06	280.00	440.00	160.00	49
774	608263.43	3583522.71	550.00	710.00	160.00	49
820	604881.43	3580964.61	280.00	443.50	163.50	50
224	599773.33	3586089.68	258.00	423.00	165.00	50
624	611952.32	3595499.53	560.00	725.00	165.00	50
697	613657.87	3588348.54	730.00	895.00	165.00	50
225	599789.98	3586204.98	250.00	416.00	166.00	51

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Halite Depth Relative to Culebra in Potash Drillholes

ID #	UTMX	UTMY	Base of Culebra (ft)	First Report of Salt (ft)	Depth (ft) to salt below (+) or above (-) base of Culebra	Depth (m) to salt below (+) or above (-) base of Culebra
614	612007.93	3596353.18	570.00	750.00	180.00	55
786	602758.13	3583038.89	140.00	320.00	180.00	55
812	606493.42	3580250.87	330.00	510.00	180.00	55
857	604936.72	3579425.98	220.00	400.00	180.00	55
503	606957.82	3594957.86	410.00	600.00	190.00	58
742	601441.75	3587662.82	255.00	445.00	190.00	58
819	605688.50	3581045.82	360.00	554.00	194.00	59
550	610307.06	3592997.92	360.00	555.00	195.00	59
787	602786.21	3582201.02	160.00	373.00	213.00	65
785	603588.53	3583044.07	140.00	357.00	217.00	66
501	606717.12	3595680.13	440.00	680.00	240.00	73

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Appendix A

Checkprints for Geologic and Elevation Data

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Appendix A Notes

The following four checkprints reflect several data checks.

1) The geologic data (depth in feet) for the top of Culebra and base of VacaTriste taken from BLM-Carlsbad records were 100% checked for transcription errors. Corrections of geologic and a few location records are noted in checkprints 2 and 3.

2) The first checkprint in this series also served as a checkprint for State Plane X and Y coordinates for 20 randomly selected potash drillholes for which State Plane X and Y coordinates were obtained by plotting locations on standard 7.5 minute quadrangle maps. The XCOORD and YCOORD columns are checked in blue. The drillholes were located on maps again by township, range, and section descriptions; the State Plane X and Y coordinates were again determined, without reference to the previous coordinates, and were read out loud to a checker (Mahoney). Nineteen of the 20 locations checked were within ± 50 ft, which is acceptable as the original reading is not expected to be better than about ± 25 ft. The remaining measurement, about 100 ft different from the original, was accepted as a better representation of the location of the drillhole. Note that the main checkprints of State Plane X and Y coordinates and UTM coordinates are included in Appendix C.

3) Some elevation data were read from topographic maps (7.5 minute quadrangle maps) where the original data (e.g., geophysical logs) did not include an elevation.

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√ represents 100% check of data transcription from original records. DWP 4/6/01 Check Print #1

Blue √ is blind recheck of X,Y of 20 randomly selected pts. 4/7/02 DWP State X and Y NOT checked

4/4/02 CMM

ID	DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTI	FNSL	FEWL	ELEVAT	CULEBR	VACATRI	XCORD	YCORD	DRILLHOLE_NAME	ID
1	U-30	20 S	31 E	14	2140s	500w	3450	838	1384	650525	571950	U-30	1
2	U-75-A	21 S	30 E	15	450s	700w	3220	270	650.25	641725	536100	U-75-A	2
3	K-118	~~20 S~~ 21 CMM	~~32 E~~ 31 CMM	8	1320s	1320w	3480	520		666675	576500	K-118	3
4	K-113	20 S	32 E	35	50s	1100e	3585	1290		685500	554250	K-113	4
5	K-112	20 S	32 E	35	100s	1500w	3557	1190		682800	554300	K-112	5
6	Wills-10-A (W-10A)	21 S	30 E	1	1116s	827e	3430	440	1008	655875	547400	Wills-10-A (W-10A)	6
7	Wills 10	21 S	30 E	1	1116s	817e	3430			655885	547400	Wills 10	7
8	D-131	21 S	30 E	1	2985n	1411w	3491	590	1192.2	652775	551050	D-131	8
9	U-126	21 S	30 E	2	180s	2459w	3463	505	1059.67	648625	546500	U-126	9
10	US Potash (U-0)	21 S	30 E	2	2691s	250w	3524		1195.25	646400	549000	US Potash (U-0)	10
11	D-157	21 S	30 E	3	745s	1549w	3467	490	1114	642425	547000	D-157	11
12	U-91	21 S	30 E	3	4242n	1080w	3485	540	1168.42	642000	549750	U-91	12
13	Wills #13 (W-13)	21 S	30 E	3	979s	2434e	3490	500	1120.8	643750	547300	Wills #13 (W-13)	13
14	Wills-9 (W-09)	21 S	30 E	3	3918n	1017e	3538	600	1226.4	645125	550125	Wills-9 (W-09)	14
15	Wills 14 (W-14)	21 S	30 E	3	1259n	1331e	3556	660	1264.1	644750	552800	Wills 14 (W-14)	15
16	D-158	21 S	30 E	10	1776s	1935w	3418	370	1025	642800	542800	D-158	16
17	Wills 12 (W-12)	21 S	30 E	10	2170n	1457e	3457	430	1076	644675	544100	Wills 12 (W-12)	17
18	US Potash #1 Aray McNutt J (U-S)	21 S	30 E	10	2340.82s	150w	3445	400	1074.25	641025	543350	US Potash #1 Aray McNutt J (U-S)	18
19	FC-62	21 S	30 E	10	707s	707e	3420	380	1000	645450	541725	FC-62	19
20	D-112	21 S	30 E	10	1083n	810w	3430	410	1054	641675	545150	D-112	20
21	Wills 11	21 S	30 E	11	2595s	1940e	3421	483	987.5	649500	543600	Wills 11	21
22	D-152	21 S	30 E	11	1261s	1417w	3421	390	976.4	647575	542300	D-152	22
23	D-156	21 S	30 E	11	1237n	1268w	3462	500	1045.4	647425	545075	D-156	23
24	U-63	21 S	30 E	13	2960n	340w	3275	250	686.84	651850	538000	U-63	24
25	K-159	21 S	30 E	18	1200s	200e	3300			630125	536775	K-159	25
26	FC-80	21 S	30 E	24	580n	470e	3274	330	700.16	656400	535225	FC-80	26
27	Crosby #1 (RC-01)	21 S	30 E	25	1098s	969w	~~3250~~ 3258 CMM	419	864.5	652500	526250	Crosby #1 (RC-01)	27
28	Crosby #2 (RC-02)	21 S	30 E	26	983n	1364w	3223		729.67	647650	529450	Crosby #2 (RC-02)	28
29	I-123	21 S	30 E	34	1320n	2640w	3170	230	652.33	643650	523800	I-123	29
30	K-109	21 S	31 E	1	500n	500e	3595	1340	1944.33	687800	553725	K-109	30
31	K-138	21 S	31 E	1	5351n	50e	3615	1390	2027.16	688275	548850	K-138	31
32	K-137	21 S	31 E	1	3650n	25e	3605	1350		688300	550500	K-137	32
33	K-133	21 S	31 E	1	1320n	1320w	3578	1200		684350	552850	K-133	33
34	NF-51-F	21 S	31 E	2	2640s	2640w	3540	1020	1624.67	680450	548850	NF-51-F	34
35	FC-58	21 S	31 E	2	3500n	700w	3533	998	1605.92	678475	550550	FC-58	35
36	K-107	21 S	31 E	2	750n	2050w	3570	1090		679875	553450	K-107	36
37	NMP-163	21 S	31 E	~~2~~ 21 CMM	50s	2600w	3440		X 669925 CMM	683425	546175	NMP-163 Y 530325 CMM	37
38	K-111	21 S	31 E	2	4000n	100e	3590	1150	1809.67	682850	550200	K-111	38
39	K-102	21 S	31 E	3	4040s	1350e	3529 CMM	860		675475	550275	K-102	39
40	NF-50-F	21 S	31 E	3	2550s	2640w	3553	930	1536.33	675150	548675	NF-50-F	40
41	K-100	21 S	31 E	3	0s	2540e	3591	940		675300	546150	K-100	41
42	FC-57	21 S	31 E	3	2600n	2640w	3528	920	1523.5	675150	551550	FC-57	42

← NF-23-F (3); ← U-144 (9); ← D-159 (20); ← U-75, ← MPE-186 (25); ← MPE-185, ← MPE-179, MPE-179-A (28); ← K-161 (38)

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43	FC-55	21 S	31 E	3	3960s	50w	3577	910	1513.5	672525	550150	FC-55	43
44	K-99	21 S	31 E	3	2100s	900w	3580	850		673525	548200	K-99	44
45	K-103	21 S	31 E	3	1600n	350e	3525	1050		677500	552600	K-103	45
46	FC-64	21 S	31 E	4	680n	2560e	3602	851.25	1502.58	669950	553470	FC-64	46
47	FC-54	21 S	31 E	4	50s	2640w	3575	818	1435	669900	546200	FC-54	47
48	FC-83	21 S	31 E	4	1500s	700e	3609.5	890	1513	671800	547675	FC-83	48
49	FC-85	21 S	31 E	4	1317s	1302w	3561.7	785	1421.42	668500	547475	FC-85	49
50	NF-49-F	21 S	31 E	4	2642s	2640w	3595	860	1473.75	669825	548700	NF-49-F	50
51	FC-64-A	21 S	31 E	4	700n	2560e	3602	851.25	1502.58	669950	553450	FC-64-A	51
52	NF-53-F	21 S	31 E	4	2640n	2643w	3560	880	1465.5	669750	551525	NF-53-F	52
53	FC-74	21 S	31 E	4	1026s	2549e	3602	853	1502.92	669950	547200	FC-74	53
54	NF-22-F	21 S	31 E	5	875s	350w	3602	850	1412.5	662300	547025	NF-22-F	54
55	FC-87	21 S	31 E	5	2010s	755e	3526.3	700	1359.75	666450	548150	FC-87	55
56	NF-21-F	21 S	31 E	5	3960s	300e	3606	848	1468.16	666850	550050	NF-21-F	56
57	NF-41-F	21 S	31 E	5	100n	60e	3559	840	1442	667000	554000	NF-41-F	57
58	NF-19-F	21 S	31 E	5	100s	100w	3458	540	1094.75	662050	546200	NF-19-F	58
59	FC-60	21 S	31 E	5	2600n	2625w	3495	730	1331.58	664525	551475	FC-60	59
60	FC-56	21 S	31 E	5	1980s	2640w	3486.5	630	1244.16	664550	548100	FC-56	60
61	NF-8-F	21 S	31 E	5	100s	100e	3525	730	1325.5	667150	546275	NF-8-F	61
62	NF-03-F	21 S	31 E	5	125n	2639e	3594		1430	664425	554000	NF-03-F	62
63	FC-90	21 S	31 E	5	1102s	1642e	3495.5	675	1264.92	665600	547250	FC-90	63
64	NF-24-F	21 S	31 E	5	3960n	1000w	3475	670	1291.84	662900	550125	NF-24-F	64
65	NF-48-F	21 S	31 E	6	3960n	1500e	3445	590	1185.16	660400	550125	NF-48-F	65
66	NF-37-F	21 S	31 E	7	2641s	100e	3487.2	530	1075	661850	543400	NF-37-F	66
67	NF-39-F	21 S	31 E	7	2641s	2640e	3443	450	1000.42	659300	543400	NF-39-F	67
68	K-117	21 S	31 E	7	1320s	1320e	3360	520		660675	542125	K-117	68
69	K-115	21 S	31 E	7	1320n	1320e	3480	560		660675	544700	K-115	69
70	FC-88	21 S	31 E	8	1375n	1395e	3534.8	670	1259.84	665800	544775	FC-88	70
71	NF-30-F	21 S	31 E	8	2640n	2640e	3508		1164	664650	543425	NF-30-F	71
72	FC-89	21 S	31 E	8	200n	2600e	3506	655	1226	664600	545875	FC-89	72
73	K-116	21 S	31 E	8	1320n	1320w	3520	580		663300	544650	K-116	73
74	NF-35-F	21 S	31 E	8	238s	238w	3355	510		662250	541075	NF-35-F	74
75	FC-61	21 S	31 E	9	50s	2642w	3538	700	1300.33	669900	541000	FC-61	75
76	FC-86	21 S	31 E	9	968n	1676w	3541.2	730	1364.58	668925	545150	FC-86	76
77	K-95	21 S	31 E	9	1260s	1000e	3570			671525	542150	K-95	77
78	FC-84	21 S	31 E	9	558n	1241e	3615.5	900	1526.67	671250	545625	FC-84	78
79	NF-32-F	21 S	31 E	9	1983n	330w	3515	690	1277.75	667600	544125	NF-32-F	79
80	NF-31-F	21 S	31 E	9	2000n	2000e	3559	758	1389.75	670500	544125	NF-31-F	80
81	NF-44-F	21 S	31 E	10	2640s	2640w	3607	900	1507.75	675200	543550	NF-44-F	81
82	NF-42-F	21 S	31 E	10	330n	320w	3620	900	1518.33	672850	545825	NF-42-F	82
83	K-94	21 S	31 E	10	2240n	0w	3610	840	1500	672525	543975	K-94	83
84	NF-38-F	21 S	31 E	10	228s	2644e	3620	870	1496.42	675125	541150	NF-38-F	84
85	FC-59	21 S	31 E	11	300n	300w	3555	956	1565.5	678100	545850	FC-59	85
86	K-139	21 S	31 E	12	800n	600w	3575	1090		683725	545450	K-139	86

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87	NMP-153 (K-153)	21 S	31 E	13	70s	70e	3605	1040		688300	535800	NMP-153 (K-153)	87
88	FC-72	21 S	31 E	14	2640s	2640w	3605	975	1599.84	680575	538275	FC-72	88
89	FC-71	21 S	31 E	14	141n	141w	3600	940	1543.75	677925	540700	FC-71	89
90	FC-67	21 S	31 E	14	141s	141w	3575	894	1492.67	677950	535700	FC-67	90
91	FC-73	21 S	31 E	14	141s	141e	3609	990	1650.42	682950	535775	FC-73	91
92	NF-36-F CMM	21 S	31 E	15	2590n	2642e	3600	860	1456.92	675050	538150	NF-36-F	92
93	NF-33-A	21 S	31 E	15	70n	528w	3577	820	1422.33	673175	540825	NF-33-A	93
94	NF-46-F	21 S	31 E	16	2640n	2640e	3525	635	1212.84	669800	538175	NF-46-F	94
95	FC-75	21 S	31 E	16	250s	250w	3490	560	1128	667450	535700	FC-75	95
96	KP-96	21 S	31 E	16	1300n	1000e	3550	720		671525	539500	KP-96 539600	96
97	KP-97	21 S	31 E	16	1400s	500e	3570	750		672075	537000	KP-97	97
98	NF-45-F	21 S	31 E	17	318n	84e	3508	597	1160.42	667200	540550	NF-45-F	98
99	FC-77	21 S	31 E	17	2600s	2600e	3367	525	942.33	664700	538150	FC-77	99
100	NMP-161	21 S	31 E	18	2500s	2500e	3310			659900	538000	NMP-161	100
101	NMP-160 (K-160)	21 S	31 E	18	1700n	1300w	3300		CMM 3	658100	539000	NMP-160 (K-160)	101
102	FC-79	21 S	31 E	19	2400s	2400e	3270	400	813.37	659650	532625	FC-79	102
103	NMP-165	21 S	31 E	20	20s	2640e	3350			664725	530300	NMP-165	103
104	FC-78	21 S	31 E	20	2450s	2450e	3340	510	935.33	664825	532700	FC-78	104
105	NMP-166	21 S	31 E	20	50s	50w	3330			662100	530300	NMP-166	105
106	K-98	21 S	31 E	21	160n	2282e	3515	680		670300	535350	K-98	106
107	FC-76	21 S	31 E	21	2640n	2626w	3472	660	1222	669950	532875	FC-76	107
108	NMP-164	21 S	31 E	21	50s	50w	3385			667400	530350	NMP-164	108
109	NFU-40-F	21 S	31 E	22	200n	668w	3540	750	1313.16	673275	535300	NFU-40-F	109
110	NF-43-F	21 S	31 E	22	2640n	2640w	3510	740	1316.42	675325	532775	NF-43-F	110
111	NMP-156 (K-156)	21 S	31 E	23	250s	250e	3625			682900	530650	NMP-156 (K-156)	111
112	NMP-155 (K-155)	21 S	31 E	24	1700s	70e	3640		1675	688325	531700	NMP-155 (K-155)	112
113	KP-93	21 S	31 E	24	2740n	200w	3620	990	1616.75	683350	532975	KP-93	113
114	NMP-154 (K-154)	21 S	31 E	24	1800n	2500e	3615	1030	1655	685850	533900	NMP-154 (K-154)	114
115	NMP-157 (K-157)	21 S	31 E	26	500s	2000w	3500	720		679875	525550	NMP-157 (K-157)	115
116	NMP-167	21 S	31 E	27	2630n	2650e	3475	670		675250	527650	NMP-167	116
117	FC-66	21 S	31 E	27	300n	200w	3458	647	1214.42	672700	530000	FC-66	117
118	NMP-168	21 S	31 E	28	2640n	2640e	3435			669975	527575	NMP-168	118
119	USP-135	21 S	31 E	28	300s	600w	3420	600	1181.16	668025	525425	USP-135	119
120	NMP-170	21 S	31 E	29	2640n	20e	3410			667325	527650	NMP-170	120
121	NMP-169	21 S	31 E	29	2640s	2640e	3388 CMM			664700	527650	NMP-169	121
122	Wills-8 (W-8)	21 S	31 E	30	2667s CMM	2060w CMM	3250.5	423	858.58	657000	527650	Wills-8 (W-8)	122
123	Wills-7	21 S	31 E	31	264n	471w	3333	440	1031	657300	524700	Wills-7	123
124	FC-63	21 S	31 E	32	300n	2540w	3409	580	1146.5	664650	524700	FC-63	124
125	FC-68	21 S	31 E	32	141s	141e	3430	700	1288.08	667300	519900	FC-68	125
126	FC-65	21 S	31 E	34	100s	100w	3465	760	1342.33	672750	519800	FC-65	126
127	NF-52-F	21 S	31 E	34	250n	2208e	3485	740	1263.67	675675	524800	NF-52-F	127
128	FC-69	21 S	31 E	34	141n	150w	3461	709	1240.75 CMM	672775	524825	FC-69	128
129	D-96	22 S	30 E	3	693d	977e	3389		783	645200	519150	D-96	129
130	U-168	22 S	30 E	3	1320s	300e	3170	360	794.1	645900	515900	U-168	130

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131	Gypsy #3 (GO-03)	22 S	30 E	4	150n	400e	3178		650	640400	519625	Gypsy #3 (GO-03)	131
132	U-167	22 S	30 E	4	1320s	200e	3164.6	270	703.75	640675	515825	U-167	132
133	NM Potash #1 / Lomasson 1 (I-A)	22 S	30 E	6	1998.1s	2193.3w	3158	395	505.58	628800	516600	NM Potash #1 / Lomasson 1 (I-A)	133
134	NM Potash #3A / Lommasson Test #3 (I-C)	22 S	30 E	6	3413s	4645w	3185.9	200	531.767	629275	518000	NM Potash #3A / Lommasson Test #3 (I-C)	134
135	NM Potash #2/Lommasson #2 (I-B)	22 S	30 E	6	3311.4s	2561.7w	3231.2	230	586.5	627200	517900	NM Potash #2/Lommasson #2 (I-B)	135
136	Gypsy Oil #4 (GO-04)	22 S	30 E	8	756s	756w	3169		620	630850	510050	Gypsy Oil #4 (GO-04)	136
137	U-163-S	22 S	30 E	9	1320n	2640w	3146.4	270	698	638050	513325	U-163-S	137
138	U-97-A	22 S	30 E	9	315s	219w	3117	260	702	635775	509650	U-97-A	138
139	I-322	22 S	30 E	9	2406n	578w	3145	260		635900	512150	I-322	139
140	I-326	22 S	30 E	9	215n	783w	3163	230		636225	514400	I-326	140
141	D-82	22 S	30 E	10	1883n	2574e	3149	320	782.4	643625	512650	D-82	141
142	D-121	22 S	30 E	11	1247s	1302w	3202	410	885	647500	510525	D-121	142
143	D-120	22 S	30 E	13	1562n	1565w	3338	550	1131.6	653125	507725	D-120	143
144	D-48	22 S	30 E	14	134s	2039e	3337	520	1121	649500	504175	D-48	144
145	I-147	22 S	30 E	20	1320s	1320e	3115	215	691.58	634100	499990	I-147	145
146	NM Potash & Chemical #1 (I-D)	22 S	30 E	20	754.5n	1568.9w	3076		604.33	631650	503200	NM Potash & Chemical #1 (I-D)	146
147	IMCC #145 (I-145)	22 S	30 E	20	1320n	1320e	3090	120	661.08	634150	502700	IMCC #145 (I-145)	147
148	IMCC # 143 (I-143)	22 S	30 E	20	1320n	1320w	3060	110	581.58	631425	502700	IMCC # 143 (I-143)	148
149	I-114	22 S	30 E	20	1320s	1320w	3062	135	578.08	631500	499950	I-114	149
150	D-33	22 S	30 E	21	109s	81e	3262	352	927.42	640800	498850	D-33	150
151	I-111	22 S	30 E	21	1320n	2640e	3156	340	790.92	638175	502650	I-111	151
152	I-112	22 S	30 E	21	1320s	1320w	3215	270	835.92	636900	500050	I-112	152
153	D-263	22 S	30 E	22	2563n	272e	3305		1021.25	645950	501475	D-263	153
154	D-264	22 S	30 E	22	2585n	2551e	3295		974.1	643700	502000	D-264	154
155	D-259	22 S	30 E	23	1873s	1144e	3361		1135.2	650400	500700	D-259	155
156	D-261	22 S	30 E	23	407n	1513w	3342			647750	503625	D-261	156
157	D-262	22 S	30 E	23	213n	70w	3328			646300	503875	D-262	157
158	D-202	22 S	30 E	23	1289.12s	1202.48w	3323	470	1062.1	647375	499950	D-202	158
159	D-260	22 S	30 E	23	1093n	789e	3349		1148.2	650775	503000	D-260	159
160	D-255	22 S	30 E	23	104s	1303e	3347			650250	498800	D-255	160
161	D-258	22 S	30 E	23	1508n	2677e	3329			648900	502500	D-258	161
162	D-104	22 S	30 E	24	2585n	1394e	3388	630	1212.1	655500	501500	D-104	162
163	D-235	22 S	30 E	25	2878s	789w	3336		1108.5	652375	496450	D-235	163
164	D-203	22 S	30 E	26	2650s	1276.3e	3317	490	1070.3	650350	496050	D-203	164
165	D-254	22 S	30 E	26	300n	2100w	3320			648400	498400	D-254	165
166	D-233	22 S	30 E	26	4810s	13w	3308		1024.3	646300	498400	D-233	166
167	D-234	22 S	30 E	26	188s	4712w	3310		10437	651000	493650	D-234	167

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168	D-200	22 S	30 E	27	540s	20w	3247	275		641000	494100	D-200	168
169	D-181	22 S	30 E	27	2664s	2625e	3288	340	954.8	643750	496200	D-181	169
170	D-231	22 S	30 E	27	2370s	224e	3289		1002.5	646100	495900	D-231	170
171	D-232	22 S	30 E	27	1326s	1366w	3258			642350	494800	D-232	171
172	D-224	22 S	30 E	28	1377n	1390e	3269			639500	497375	D-224	172
173	D-219	22 S	30 E	28	1221s	1237e	3224.5	275		639750	494650	D-219	173
174	D-216	22 S	30 E	28	1199.5s	1421.1w	3169 CMM	230	769	637000	494600	D-216	174
175	D-185	22 S	30 E	28	2593n	16e	3284	330	928.4	641000	496100	D-185	175
176	D-167	22 S	30 E	28	2447s	2652e	3228	250	830.3	638350	495850	D-167	176
177	D-225	22 S	30 E	28	1822n	1351w	3257			637000	496800	D-225	177
178	D-278	22 S	30 E	28	1200s	100w	3165			635700	494600	D-278	178
179	D-199	22 S	30 E	33	2477n	2539e	3121	184		638400	491000	D-199	179
180	D-218	22 S	30 E	33	1246n	1441e	3143	220		639500	492150	D-218	180
181	D-196	22 S	30 E	33	3077n	2540e	3124	183		638500	490400	D-196	181
182	D-221	22 S	30 E	33	1351s	1331e	3134	215		639800	489500	D-221	182
183	D-195	22 S	30 E	33	2777.16n	2539.67e	3120	186.5		638600	490750	D-195	183
184	D-194	22 S	30 E	33	270.6n	1464.9e	3164.3	238		639600	490750	D-194	184
185	D-217	22 S	30 E	33	1294 N CMM	1321 W CMM	3132 CMM	220		637000	492100	D-217	185
186	D-170	22 S	30 E	33	2698.76n	2543.21e	3128	190	712.6	638500	490800	D-170	186
187	D-38	22 S	30 E	33	97n	2551w	3173	240	766.8	638250	493300	D-38	187
188	D-168	22 S	30 E	33	178.5n	243.5e	3179	240	803.9	640800	493250	D-168	188
189	D-169	22 S	30 E	33	21.8n	69.7w CMM	3144	210	721.4	635700	493300	D-169	189
190	D-228	22 S	30 E	33	1777s CMM	2504w CMM	3127 CMM			638200	489975	D-228	190
191	D-226	22 S	30 E	33	2591s	1302w	3109			637100	490750	D-226	191
192	D-180	22 S	30 E	34	2944n	2681e	3210	320	843.1	643700	490500	D-180	192
193	D-188	22 S	30 E	34	2621n	67w	3174	230	772	641150	490900	D-188	193
194	D-230	22 S	30 E	34	1505n	2672w	3231			642250	494700	D-230	194
195	D-36	22 S	30 E	34	280n	325e	3277	360	963.3	646000	493150	D-36	195
196	USGS 3 (GS 3)	22 S	30 E	34	252s	247w	3152	202	748	641350	488450	USGS 3 (GS 3)	196
197	D-229	22 S	30 E	34	618n	1334w	3218			642400	492875	D-229	197
198	D-249	22 S	30 E	35	2627n	306w	3265		951.2	646675	490775	D-249	198
199	D-160-S	22 S	30 E	36	2464s	1117w	3305	410	1024	652750	490650	D-160-S	199

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TBL_DHData3 Check Print #2

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CMM 4/4/02

ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
1	U-30	20 S	31 E	14	2140s	500w	3450	838	1384
2	NF-23-F	20 S	32 E	27	1000s	2640w	3547	1150	1759.16
3	NF-23-F	20 S	32 E	27	1000s	2640w	3547	1150	1759.16
4	K-113	20 S	32 E	35	50s	1100e	3585	1290	
5	K-112	20 S	32 E	35	100s	1500w	3557	1190	
6	Wills 10	21 S	30 E	1	1116s	817e	3430		
7	D-131	21 S	30 E	1	2985n	1411w	3491	590	1192.2
8	Wills-10-A (W-	21 S	30 E	1	1116s	827e	3430	440	1008
9	US Potash (U-0	21 S	30 E	2	2691s	250w	3524		1195.25
10	U-144	21 S	30 E	2	995.6n	2477.8w	3567	680	1294.75
11	U-126	21 S	30 E	2	180s	2459w	3463	505	1059.67
12	U-91	21 S	30 E	3	4242n	1080w	3485	540	1168.42
13	D-157	21 S	30 E	3	745s	1549w	3467	490	1114
14	Wills-9 (W-09)	21 S	30 E	3	3918n	1017e	3538	600	1226.4
15	Wills #13 (W-1	21 S	30 E	3	979s	2434e	3490	500	1120.8
16	Wills 14 (W-14)	21 S	30 E	3	1259n	1331e	3556	660	1264.1
17	D-158	21 S	30 E	10	1776s	1935w	3418	370	1025
18	D-112	21 S	30 E	10	1083n	810w	3430	410	1054
19	FC-62	21 S	30 E	10	707s	707e	3420	380	1000
20	US Potash #1	21 S	30 E	10	2340.82s	150w	3445	400	1074.25
21	Wills 12 (W-12)	21 S	30 E	10	2170n	1457e	3457	430	1076
22	D-152	21 S	30 E	11	1261s	1417w	3421	390	976.4
23	D-156	21 S	30 E	11	1237n	1268w	3462	500	1045.4
24	Wills 11	21 S	30 E	11	2595s	1940e	3421	483	987.5
25	D-159	21 S	30 E	11	1220n	100w	3464	460	1053.84
26	U-63	21 S	30 E	13	2960n	340w	3275	250	686.84
27	K-159	21 S	30 E	13	1200s	200e	3300		
28	U-75	21 S	30 E	15	450s	690w	3220	0	0
29	U-75-A	21 S	30 E	15	450s	700w	3220	270	650.25
30	MPE-186	21 S	30 E	23	1498s	285e	3210	0	0
31	FC-80	21 S	30 E	24	580n	470e	3274	330	700.16
32	Crosby #1 (RC-	21 S	30 E	25	1098s	969w	3258	419	864.5
33	MPE-185	21 S	30 E	26	346s	2505e	3530	0	0

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ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
34	Crosby #2 (RC-	21 S	30 E	26	983n	1364w	3223		729.67
35	MPE-179	21 S	30 E	27	645n	2486e	3098	0	0
36	MPE-179-A	21 S	30 E	27	645n	2480e	3175	0	0
37	I-123	21 S	30 E	34	1320n	2640w	3170	230	652.33
38	K-109	21 S	31 E	1	500n	500e	3595	1340	1944.33
39	K-133	21 S	31 E	1	1320n	1320w	3578	1200	
40	K-138	21 S	31 E	1	5351n	50e	3615	1390	2027.16
41	K-137	21 S	31 E	1	3650n	25e	3605	1350	
42	NF-51-F	21 S	31 E	2	2640s	2640w	3540	1020	1624.92
43	FC-58	21 S	31 E	2	3500n	700w	3533	998	1605.92
44	K-107	21 S	31 E	2	750n	2050w	3570	1090	
45	K-111	21 S	31 E	2	4000n	100e	3590	1150	1809.67
46	FC-57	21 S	31 E	3	2600n	2640w	3528	920	1523.5
47	K-101	21 S	31 E	3	2640s	50e	3535	950	1370
48	K-103	21 S	31 E	3	1600n	350e	3525	1050	
49	K-99	21 S	31 E	3	2100s	900w	3580	850	
50	K-100	21 S	31 E	3	0s	2540e	3591	940	
51	NF-50-F	21 S	31 E	3	2550s	2640w	3553	930	1536.33
52	K-102	21 S	31 E	3	4040s	1350e	3529	860	
53	FC-55	21 S	31 E	3	3960s	50w	3577	910	1513.5
54	NF-53-F	21 S	31 E	4	2640n	2643w	3560	880	1465.5
55	FC-74	21 S	31 E	4	1026s	2549e	3602	853	1502.92
56	FC-64-A	21 S	31 E	4	700s	2560e	3602	851.25	1502.58
57	NF-49-F	21 S	31 E	4	2642s	2640w	3595	860	1473.75
58	FC-85	21 S	31 E	4	1317s	1302w	3561.66	785	1421.42
59	FC-54	21 S	31 E	4	50s	2640w	3575	818	1435
60	FC-64	21 S	31 E	4	680s	2560e	3602		
61	FC-83	21 S	31 E	4	1500s	700e	3609.49	890	1513
62	NF-21-F	21 S	31 E	5	3960s	300e	3606	848	1468.16
63	NF-24-F	21 S	31 E	5	3960n	1000w	3475	670	1291.84
64	FC-90	21 S	31 E	5	1102s	1642e	3495.51	675	1264.92
65	NF-03-F	21 S	31 E	5	125n	2639e	3594		1430
66	NF-8-F	21 S	31 E	5	100s	100e	3525	730	1325.5

Information Only

[redacted]ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
67	FC-56	21 S	31 E	5	1980s	2640w	3485	630	1244.16
68	FC-60	21 S	31 E	5	2600n	2625w	3495	730	1331.58
69	NF-22-F	21 S	31 E	5	875s	350w	3602	850	1412.5
70	NF-41-F	21 S	31 E	5	100n	60e	3559	840	1442
71	FC-87	21 S	31 E	5	2010s	755e	3526.29	700	1359.75
72	NF-19-F	21 S	31 E	5	100s	100w	3458	540	1094.75
73	NF-48-F	21 S	31 E	6	3960n	1500e	3445	590	1185.16
74	K-115	21 S	31 E	7	1320n	1320e	3480	560	
75	K-117	21 S	31 E	7	1320s	1320e	3360	520	
76	NF-39-F	21 S	31 E	7	2641s	2640e	3443	450	1000.42
77	NF-37-F	21 S	31 E	7	2641s	100e	3482	530	1075
78	K-119	21 S	31 E	8	1320s	1320e	3510	610	
79	K-118	21 S	31 E	8	1320s	1320w	3480	520	
80	FC-88	21 S	31 E	8	1375n	1395e	3534.75	670	1259.84
81	NF-30-F	21 S	31 E	8	2640n	2640e	3508		1164
82	FC-89	21 S	31 E	8	200n	2600e	3506.02	655	1226
83	K-116	21 S	31 E	8	1320n	1320w	3520	580	
84	NF-35-F	21 S	31 E	8	238s	238w	3355	510	
85	FC-84	21 S	31 E	9	558n	1241e	3615.5	900	1526.67
86	NF-32-F	21 S	31 E	9	1983n	330w	3515	690	1277.75
87	FC-86	21 S	31 E	9	968n	1676w	3541.2	730	1364.58
88	FC-61	21 S	31 E	9	50s	2642w	3538	700	1300.33
89	NF-31-F	21 S	31 E	9	2000n	2000e	3559	758	1389.75
90	K-95	21 S	31 E	9	1260s	1000e	3570		
91	NF-38-F	21 S	31 E	10	228s	2644e	3620	870	1496.42
92	NF-44-F	21 S	31 E	10	2640s	2640w	3607	900	1507.75
93	NF-42-F	21 S	31 E	10	330n	320w	3620	900	1518.33
94	K-94	21 S	31 E	10	2240n	0w	3610	840	1500
95	FC-59	21 S	31 E	11	300n	300w	3555	956	1565.5
96	K-139	21 S	31 E	12	800n	600w	3575	1090	
97	NMP-153 (K-15	21 S	31 E	13	70s	70e	3605	1040	
98	FC-73	21 S	31 E	14	141s	141e	3609	990	1650.42
99	FC-72	21 S	31 E	14	2640s	2640w	3605	975	1599.84

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ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
100	FC-71	21 S	31 E	14	141n	141w	3600	940	1543.75
101	FC-67	21 S	31 E	14	141s	141w	3575	894	1492.67
102	NF-33-A	21 S	31 E	15	70n	528w	3577	820	1422.33
103	NF-36-F	21 S	31 E	15	2590n	2642e	3600	860	1456.92
104	KP-97	21 S	31 E	16	1400s	500e	3570	750	
105	KP-96	21 S	31 E	16	1300n	1000e	3550	720	
106	FC-75	21 S	31 E	16	250s	250w	3490	560	1128
107	NF-46-F	21 S	31 E	16	2640n	2640e	3525	635	1212.84
108	FC-77	21 S	31 E	17	2600s	2600e	3367	525	942.33
109	NF-45-F	21 S	31 E	17	318n	84e	3508	597	1160.42
110	NMP-160 (K-16	21 S	31 E	18	1700n	1300w	3300		
111	NMP-161	21 S	31 E	18	2500s	2500e	3310		
112	FC-79	21 S	31 E	19	2400s	2400e	3270	400	813.33
113	FC-78	21 S	31 E	20	2450s	2450e	3340	510	935.33
114	NMP-166	21 S	31 E	20	50s	50w	3330		
115	NMP-165	21 S	31 E	20	20s	2640e	3350		
116	K-98	21 S	31 E	21	160n	2282e	3515	680	
117	FC-76	21 S	31 E	21	2640n	2626w	3472	660	1222
118	NMP-164	21 S	31 E	21	50s	50w	3385		
119	NMP-163	21 S	31 E	21	50s	2600w	3440		
120	NFU-40-F	21 S	31 E	22	200n	668w	3540	750	1313.16
121	NF-43-F	21 S	31 E	22	2640n	2640w	3510	740	1316.42
122	NMP-156 (K-15	21 S	31 E	23	250s	250e	3625		
123	NMP-155 (K-15	21 S	31 E	24	1700s	70e	3640		1675
124	KP-93	21 S	31 E	24	2740n	200w	3620	990	1616.75
125	NMP-154 (K-15	21 S	31 E	24	1800n	2500e	3615	1030	1655
126	NMP-157 (K-15	21 S	31 E	26	500s	2000w	3500	720	
127	NMP-167	21 S	31 E	27	2630n	2650e	3475	670	
128	FC-66	21 S	31 E	27	300n	200w	3458	647	1214.42
129	NMP-168	21 S	31 E	28	2640n	2640e	3435		
130	USP-135	21 S	31 E	28	300s	600w	3420	600	1181.16
131	NMP-169	21 S	31 E	29	2640s	2640e	3388		
132	NMP-170	21 S	31 E	29	2640n	20e	3410		

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ID	DRILLHOLE	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
133	Wills-8 (W-8)	21 S	31 E	30	2667s	2060w	3250.5	423	858.58
134	Wills-7	21 S	31 E	31	264n	471w	3333	440	1031
135	FC-63	21 S	31 E	32	300n	2540w	3409	580	1146.5
136	FC-68	21 S	31 E	32	141s	141e	3430	700	1288.08
137	FC-69	21 S	31 E	34	141n	150w	3461	709	1240.92
138	FC-65	21 S	31 E	34	100s	100w	3465	760	1342.33
139	NF-52-F	21 S	31 E	34	250n	2208e	3485	740	1263.67
140	MPE-183	21 S	31 E	35	183s	136w	3508	0	0
141	K-140	21 S	32 E	6	3568n	2777w	3618	1370	0
142	#1 IMCC Water T	22 S	29 E	12	1070n	2604w	3202	200	0
143	#3 IMCC Water T	22 S	29 E	12	1764n	1959w	3192	234	0
144	#2 IMCC Water T	22 S	29 E	12	1386n	2310w	3200	220	0
145	D-96	22 S	30 E	3	693n	977e	3189		783
146	U-168	22 S	30 E	3	1320s	300e	3170	320	794.1
147	Gypsy #3 (GO-	22 S	30 E	4	150n	400e	3178		650
148	U-167	22 S	30 E	4	1320s	200e	3164.6	270	703.75
149	I-323	22 S	30 E	4	1324s	1518e	cum 3161 0	320	0
150	NM Potash #2/	22 S	30 E	6	3311.4s	2561.7w	3231.2	230	586.5
151	NM Potash #3A	22 S	30 E	6	3413s	4645w	3185.9	200	531.67
152	NM Potash #1 /	22 S	30 E	6	1998.1s	2193.3w	3158	395	505.58
153	Gypsy Oil #4 (	22 S	30 E	8	756s	756w	3169		620
154	U-97-A	22 S	30 E	9	315s	291w	3117	260	702
155	U-97	22 S	30 E	9	301s cum	305w cum	cum 3117 0	0	0
156	I-322	22 S	30 E	9	2406n	578w	3145	260	
157	U-163-S	22 S	30 E	9	1320n	2640w	3146.37	270	698
158	I-326	22 S	30 E	9	215n	783w	3163	230	
159	D-82	22 S	30 E	10	1883n	2574e	3149	320	782.4
160	D-121	22 S	30 E	11	1247s	1302w	3202	410	885
161	D-120	22 S	30 E	13	1562n	1565w	3338	550	1131.6
162	D-48	22 S	30 E	14	134s	2039e	3337	520	1121
163	I-114	22 S	30 E	20	1320s	1320w	3062	135	578.08
164	IMCC # 143 (I-	22 S	30 E	20	1320n	1320w	3060	110	581.58
165	IMCC #145 (I-1	22 S	30 E	20	1320n	1320e	3090	120	661.08

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Information Only

ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
166	NM Potash & C	22 S	30 E	20	754.5n	1568.9w	3076		604.33
167	I-147	22 S	30 E	20	1320s	1320e	3115	215	691.58
168	I-111	22 S	30 E	21	1320n	2640e	3156	340	790.92
169	I-112	22 S	30 E	21	1320s	1320w	3215	270	835.92
170	D-33	22 S	30 E	21	109s	81e	3262	352	927.42
171	D-263	22 S	30 E	22	2563n	272e	3305		1021.25
172	D-264	22 S	30 E	22	2585n	2551e	3295		974.1
173	D-260	22 S	30 E	23	1093n	789e	3349		1148.2
174	D-255	22 S	30 E	23	104s	1303e	3342		
175	D-258	22 S	30 E	23	1508n	2677e	3329		
176	D-261	22 S	30 E	23	407n	1513w	3342		
177	D-262	22 S	30 E	23	213n	70w	3328		
178	D-259	22 S	30 E	23	1873s	1144e	3361		1135.2
179	D-202	22 S	30 E	23	1289.12s	1202.48w	3323	470	1062.1
180	D-104	22 S	30 E	24	2585n	1394e	3388	630	1212.1
181	D-235	22 S	30 E	25	2878s	789w	3336		1108.5
182	D-233	22 S	30 E	26	4810s	13w	3308		1024.3
183	D-254	22 S	30 E	26	300n	2100w	3320		
184	D-203	22 S	30 E	26	2650s	1276.3e	3317	490	1070.3
185	D-234	22 S	30 E	26	188s	4712w	3310		1043.7
186	D-200	22 S	30 E	27	540s	20w	3247	275	
187	D-232	22 S	30 E	27	1326s	1366w	3258		
188	D-231	22 S	30 E	27	2370s	224e	3289		1002.5
189	D-198	22 S	30 E	27	38s	2643w	3258	300	910.4
190	D-181	22 S	30 E	27	2664s	2625e	3288	340	954.8
191	D-224	22 S	30 E	28	1377n	1390e	3269		
192	D-278	22 S	30 E	28	1200s	100w	3165		
193	D-225	22 S	30 E	28	1822n	1351w	3257		
194	D-167	22 S	30 E	28	2447s	2652e	3228	250	830.3
195	D-185	22 S	30 E	28	2593n	16e	3284	330	928.4
196	D-219	22 S	30 E	28	1221s	1237e	3224.5	275	
197	D-216	22 S	30 E	28	1199.5s	1421.1w	3169	230	769
198	D-228	22 S	30 E	33	1777s	2504w	3127		

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ID	DRILLHOLE_N	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	ELEVATIO	CULEBRA	VACATRIST
199	D-221	22 S	30 E	33	1351s	1331e	3134	215	
200	D-226	22 S	30 E	33	2591s	1302w	3109		
201	D-195	22 S	30 E	33	2777.16n	2539.67e	3119.95	186.5	
202	D-199	22 S	30 E	33	2477n	2539e	3121	184	
203	D-194	22 S	30 E	33	270.6n	1464.9e	3164.25	238	
204	D-196	22 S	30 E	33	3077n	2540e	3124	183	
205	D-169	22 S	30 E	33	21.8n	69.7w	3144	210	721.4
206	D-217	22 S	30 E	33	1294n	1321w	3132	220	
207	D-170	22 S	30 E	33	2698.76n	2543.21e	3128	190	712.6
208	D-38	22 S	30 E	33	97n	2551w	3173	240	766.8
209	D-168	22 S	30 E	33	178.5n	243.5e	3179	240	803.9
210	D-218	22 S	30 E	33	1246n	1441e	3143	220	
211	D-230	22 S	30 E	34	1505n	2672w	3231		
212	D-188	22 S	30 E	34	2621n	67w	3174	230	772
213	D-180	22 S	30 E	34	2944n	2681e	3210	320	843.1
214	D-36	22 S	30 E	34	280n	325e	3277	360	963.3
215	USGS 3 (GS 3)	22 S	30 E	34	252s	247w	3152	202	748
216	D-229	22 S	30 E	34	618n	1334w	3218		
217	D-250	22 S	30 E	35	2700s	2450e	3280	0	0
218	D-250-A	22 S	30 E	35	2810s	2503e	3287		981
219	D-249	22 S	30 E	35	2627n	306w	3265		951.2
220	D-160-S	22 S	30 E	36	2464s	1117w	3305	410	1024
221	D-227	23 S	30 E	3	1278n	1184w	3246		

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TBL_DHData4 Check Print #3

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CMM 4/4/02

ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVAT	CULEBRA	VACATRIST
1	U-30	20 S	31 E	14	2140s	500w	3450	838	1384
2	NF-23-F	20 S	32 E	27	1000s	2640w	3547	1150	1759.16
3	K-112	20 S	32 E	35	100s	1500w	3557	1190	
4	K-113	20 S	32 E	35	50s	1100e	3585	1290	
5	Wills-10-A (W-10A)	21 S	30 E	1	1116s	827e	3430	440	1008
6	Wills 10	21 S	30 E	1	1116s	817e	3430		
7	D-131	21 S	30 E	1	2985n	1411w	3491	590	1192.2
8	U-126	21 S	30 E	2	180s	2459w	3463	505	1059.67
9	U-144	21 S	30 E	2	995.6n	2477.8w	3567	680	1294.75
10	US Potash (U-0)	21 S	30 E	2	2691s	250w	3524		1195.25
11	Wills-9 (W-09)	21 S	30 E	3	3918n	1017e	3538	600	1226.4
12	Wills #13 (W-13)	21 S	30 E	3	979s	2434e	3490	500	1120.8
13	Wills 14 (W-14)	21 S	30 E	3	1259n	1331e	3556	660	1264.1
14	D-157	21 S	30 E	3	745s	1549w	3467	490	1114
15	U-91	21 S	30 E	3	4242n	1080w	3485	540	1168.42
16	D-158	21 S	30 E	10	1776s	1935w	3418	370	1025
17	US Potash #1 Aray McNu	21 S	30 E	10	2340.82s	150w	3445	400	1074.25
18	FC-62	21 S	30 E	10	707s	707e	3420	380	1000
19	D-112	21 S	30 E	10	1083n	810w	3430	410	1054
20	Wills 12 (W-12)	21 S	30 E	10	2170n	1457e	3457	430	1076
21	D-156	21 S	30 E	11	1237n	1268w	3462	500	1045.4
22	D-159	21 S	30 E	11	1220n	100w	3464	460	1053.84
23	Wills 11	21 S	30 E	11	2595s	1940e	3421	483	987.5
24	D-152	21 S	30 E	11	1261s	1417w	3421	390	976.4
25	K-159	21 S	30 E	13	1200s	200e	3300		
26	U-63	21 S	30 E	13	2960n	340w	3275	250	686.84
27	U-75-A	21 S	30 E	15	450s	700w	3220	270	650.25
28	U-75	21 S	30 E	15	450s	690w	3220		
29	MPE-186	21 S	30 E	23	1498s	285e	3210		
30	FC-80	21 S	30 E	24	580n	470e	3274	330	700.16
31	Crosby #1 (RC-01)	21 S	30 E	25	1098s	969w	3258	419	864.5
32	Crosby #2 (RC-02)	21 S	30 E	26	983n	1364w	3223		729.67
33	MPE-179	21 S	30 E	27	645n	2486e	3098		

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVATI	CULEBRA	VACATRIS
34	MPE-179-A	21 S	30 E	27	645n	2480e	3175		
35	I-123	21 S	30 E	34	1320n	2640w	3170	230	652.33
36	K-109	21 S	31 E	1	500n	500e	3595	1340	1944.33
37	K-133	21 S	31 E	1	1320n	1320w	3578	1200	
38	K-138	21 S	31 E	1	5351n	50e	3615	1390	2027.16
39	K-137	21 S	31 E	1	3650n	25e	3605	1350	
40	NF-51-F	21 S	31 E	2	2640s	2640w	3540	1020	1624.92
41	FC-58	21 S	31 E	2	3500n	700w	3533	998	1605.92
42	K-107	21 S	31 E	2	750n	2050w	3570	1090	
43	K-111	21 S	31 E	2	4000n	100e	3590	1150	1809.67
44	K-101	21 S	31 E	3	2640s	50e	3535	950	1370
45	FC-57	21 S	31 E	3	2600n	2640w	3528	920	1523.5
46	K-103	21 S	31 E	3	1600n	350e	3525	1050	
47	FC-55	21 S	31 E	3	3960s	50w	3577	910	1513.5
48	NF-50-F	21 S	31 E	3	2550s	2640w	3553	930	1536.33
49	K-100	21 S	31 E	3	0s	2540e	3591	940	
50	K-102	21 S	31 E	3	4040s	1350e	3529	860	
51	K-99	21 S	31 E	3	2100s	900w	3580	850	
52	NF-53-F	21 S	31 E	4	2640n	2643w	3560	880	1465.5
53	FC-74	21 S	31 E	4	1026s	2549e	3602	853	1502.92
54	FC-64-A	21 S	31 E	4	700s	2560e	3602	851.25	1502.58
55	NF-49-F	21 S	31 E	4	2642s	2640w	3595	860	1473.75
56	FC-85	21 S	31 E	4	1317s	1302w	3561.66	785	1421.42
57	FC-54	21 S	31 E	4	50s	2640w	3575	818	1435
58	FC-64	21 S	31 E	4	680s	2560e	3602		
59	FC-83	21 S	31 E	4	1500s	700e	3609.49	890	1513
60	NF-21-F	21 S	31 E	5	3960s	300e	3606	848	1468.16
61	NF-24-F	21 S	31 E	5	3960n	1000w	3475	670	1291.84
62	FC-90	21 S	31 E	5	1102s	1642e	3495.51	675	1264.92
63	NF-03-F	21 S	31 E	5	125n	2639e	3594		1430
64	NF-8-F	21 S	31 E	5	100s	100e	3525	730	1325.5
65	FC-56	21 S	31 E	5	1980s	2640w	3485	630	1244.16
66	FC-60	21 S	31 E	5	2600n	2625w	3495	730	1331.58

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVATI	CULEBRA	VACATRIST
67	NF-22-F	21 S	31 E	5	875s	350w	3602	850	1412.5
68	NF-41-F	21 S	31 E	5	100n	60e	3559	840	1442
69	FC-87	21 S	31 E	5	2010s	755e	3526.29	700	1359.75
70	NF-19-F	21 S	31 E	5	100s	100w	3458	540	1094.75
71	NF-48-F	21 S	31 E	6	3960n	1500e	3445	590	1185.16
72	K-115	21 S	31 E	7	1320n	1320e	3480	560	
73	K-117	21 S	31 E	7	1320s	1320e	3360	520	
74	NF-39-F	21 S	31 E	7	2641s	2640e	3443	450	1000.42
75	NF-37-F	21 S	31 E	7	2641s	100e	3482	530	1075
76	K-119	21 S	31 E	8	1320s	1320e	3510	610	
77	K-118	21 S	31 E	8	1320s	1320w	3480	520	
78	FC-88	21 S	31 E	8	1375n	1395e	3534.75	670	1259.84
79	NF-30-F	21 S	31 E	8	2640n	2640e	3508		1164
80	FC-89	21 S	31 E	8	200n	2600e	3506.02	655	1226
81	K-116	21 S	31 E	8	1320n	1320w	3520	580	
82	NF-35-F	21 S	31 E	8	238s	238w	3355	510	
83	FC-84	21 S	31 E	9	558n	1241e	3615.5	900	1526.67
84	NF-32-F	21 S	31 E	9	1983n	330w	3515	690	1277.75
85	FC-86	21 S	31 E	9	968n	1676w	3541.2	730	1364.58
86	FC-61	21 S	31 E	9	50s	2642w	3538	700	1300.33
87	NF-31-F	21 S	31 E	9	2000n	2000e	3559	758	1389.75
88	K-95	21 S	31 E	9	1260s	1000e	3570		
89	NF-38-F	21 S	31 E	10	228s	2644e	3620	870	1496.42
90	NF-44-F	21 S	31 E	10	2640s	2640w	3607	900	1507.75
91	NF-42-F	21 S	31 E	10	330n	320w	3620	900	1518.33
92	K-94	21 S	31 E	10	2240n	0w	3610	840	1500
93	FC-59	21 S	31 E	11	300n	300w	3555	956	1565.5
94	K-139	21 S	31 E	12	800n	600w	3575	1090	
95	NMP-153 (K-153)	21 S	31 E	13	70s	70e	3605	1040	
96	FC-73	21 S	31 E	14	141s	141e	3609	990	1650.42
97	FC-72	21 S	31 E	14	2640s	2640w	3605	975	1599.84
98	FC-71	21 S	31 E	14	141n	141w	3600	940	1543.75
99	FC-67	21 S	31 E	14	141s	141w	3575	894	1492.67

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVAT	CULEBRA	VACATRIST
100	NF-33-A	21 S	31 E	15	70n	528w	3577	820	1422.33
101	NF-36-F	21 S	31 E	15	2590n	2642e	3600	860	1456.92
102	NF-46-F	21 S	31 E	16	2640n	2640e	3525	635	1212.84
103	KP-97	21 S	31 E	16	1400s	500e	3570	750	
104	KP-96	21 S	31 E	16	1300n	1000e	3550	720	
105	FC-75	21 S	31 E	16	250s	250w	3490	560	1128
106	FC-77	21 S	31 E	17	2600s	2600e	3367	525	942.33
107	NF-45-F	21 S	31 E	17	318n	84e	3508	597	1160.42
108	NMP-160 (K-160)	21 S	31 E	18	1700n	1300w	3300		
109	NMP-161	21 S	31 E	18	2500s	2500e	3310		
110	FC-79	21 S	31 E	19	2400s	2400e	3270	400	813.33
111	NMP-166	21 S	31 E	20	50s	50w	3330		
112	FC-78	21 S	31 E	20	2450s	2450e	3340	510	935.33
113	NMP-165	21 S	31 E	20	20s	2640e	3350		
114	K-98	21 S	31 E	21	160n	2282e	3515	680	
115	FC-76	21 S	31 E	21	2640n	2626w	3472	660	1222
116	NMP-164	21 S	31 E	21	50s	50w	3385		
117	NMP-163	21 S	31 E	21	50s	2600w	3440		
118	NFU-40-F	21 S	31 E	22	200n	668w	3540	750	1313.16
119	NF-43-F	21 S	31 E	22	2640n	2640w	3510	740	1316.42
120	NMP-156 (K-156)	21 S	31 E	23	250s	250e	3625		
121	NMP-155 (K-155)	21 S	31 E	24	1700s	70e	3640		1675
122	KP-93	21 S	31 E	24	2740n	200w	3620	990	1616.75
123	NMP-154 (K-154)	21 S	31 E	24	1800n	2500e	3615	1030	1655
124	NMP-157 (K-157)	21 S	31 E	26	500s	2000w	3500	720	
125	NMP-167	21 S	31 E	27	2630n	2650e	3475	670	
126	FC-66	21 S	31 E	27	300n	200w	3458	647	1214.42
127	NMP-168	21 S	31 E	28	2640n	2640e	3435		
128	USP-135	21 S	31 E	28	300s	600w	3420	600	1181.16
129	NMP-169	21 S	31 E	29	2640s	2640e	3388		
130	NMP-170	21 S	31 E	29	2640n	20e	3410		
131	Wills-8 (W-8)	21 S	31 E	30	2667s	206w	3250.5	423	858.58
132	Wills-7	21 S	31 E	31	264n	471w	3333	440	1031

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVAT	CULEBRA	VACATRIST
133	FC-63	21 S	31 E	32	300n	2540w	3409	580	1146.5
134	FC-68	21 S	31 E	32	141s	141e	3430	700	1288.08
135	FC-65	21 S	31 E	34	100s	100w	3465	760	1342.33
136	FC-69	21 S	31 E	34	141n	150w	3461	709	1240.92
137	NF-52-F	21 S	31 E	34	250n	2208e	3485	740	1263.67
138	MPE-183	21 S	31 E	35	183s	136w	3508	0	
139	K-140	21 S	32 E	6	3568n	2777w	3618	1370	
140	IMCC Water Test #1	22 S	29 E	12	1070n	2604w	3202	200	
141	IMCC Water Test #3	22 S	29 E	12	1764n	1959w	3192	234	
142	IMCC Water Test #2	22 S	29 E	12	1386n	2310w	3200	220	
143	D-96	22 S	30 E	3	693n	977e	3189		783
144	U-168	22 S	30 E	3	1320s	300e	3170	320	794.1
145	Gypsy #3 (GO-03)	22 S	30 E	4	150n	400e	3178		650
146	U-167	22 S	30 E	4	1320s	200e	3164.6	270	703.75
147	I-323	22 S	30 E	4	1324s	1518e	3161	320	
148	NM Potash #2/Lommass	22 S	30 E	6	3311.4s	2561.7w	3231.2	230	586.5
149	NM Potash #3A / Lomma	22 S	30 E	6	3413s	4645w	3185.9	200	531.67
150	NM Potash #1 / Lomasso	22 S	30 E	6	1998.1s	2193.3w	3158	395	505.58
151	Gypsy Oil #4 (GO-04)	22 S	30 E	8	756s	756w	3169		620
152	I-322	22 S	30 E	9	2406n	578w	3145	260	
153	U-97	22 S	30 E	9	301s	305w	3117		
154	I-326	22 S	30 E	9	215n	783w	3163	230	
155	U-97-A	22 S	30 E	9	315s	291w	3117	260	702
156	U-163-S	22 S	30 E	9	1320n	2640w	3146.37	270	698
157	D-82	22 S	30 E	10	1883n	2574e	3149	320	782.4
158	D-121	22 S	30 E	11	1247s	1302w	3202	410	885
159	D-120	22 S	30 E	13	1562n	1565w	3338	550	1131.6
160	D-48	22 S	30 E	14	134s	2039e	3337	520	1121
161	I-114	22 S	30 E	20	1320s	1320w	3062	135	578.08
162	IMCC # 143 (I-143)	22 S	30 E	20	1320n	1320w	3060	110	581.58
163	IMCC #145 (I-145)	22 S	30 E	20	1320n	1320e	3090	120	661.08
164	NM Potash & Chemical #	22 S	30 E	20	754.5n	1568.9w	3076		604.33
165	I-147	22 S	30 E	20	1320s	1320e	3115	215	691.58

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVATI	CULEBRA	VACATRIST
166	I-111	22 S	30 E	21	1320n	2640e	3156	340	790.92
167	D-33	22 S	30 E	21	109s	81e	3262	352	927.42
168	I-112	22 S	30 E	21	1320s	1320w	3215	270	835.92
169	D-264	22 S	30 E	22	2585n	2551e	3295		974.1
170	D-263	22 S	30 E	22	2563n	272e	3305		1021.25
171	D-259	22 S	30 E	23	1873s	1144e	3361		1135.2
172	D-260	22 S	30 E	23	1093n	789e	3349		1148.2
173	D-202	22 S	30 E	23	1289.12s	1202.48w	3323	470	1062.1
174	D-262	22 S	30 E	23	213n	70w	3328		
175	D-255	22 S	30 E	23	104s	1303e	3342		
176	D-261	22 S	30 E	23	407n	1513w	3342		
177	D-258	22 S	30 E	23	1508n	2677e	3329		
178	D-104	22 S	30 E	24	2585n	1394e	3388	630	1212.1
179	D-235	22 S	30 E	25	2878s	789w	3336		1108.5
180	D-233	22 S	30 E	26	4810s	13w	3308		1024.3
181	D-254	22 S	30 E	26	300n	2100w	3320		
182	D-203	22 S	30 E	26	2650s	1276.3e	3317	490	1070.3
183	D-234	22 S	30 E	26	188s	4712w	3310		1043.7
184	D-198	22 S	30 E	27	38s	2643w	3258	300	910.4
185	D-232	22 S	30 E	27	1326s	1366w	3258		
186	D-181	22 S	30 E	27	2664s	2625e	3288	340	954.8
187	D-200	22 S	30 E	27	540s	20w	3247	275	
188	D-231	22 S	30 E	27	2370s	224e	3289		1002.5
189	D-219	22 S	30 E	28	1221s	1237e	3224.5	275	
190	D-278	22 S	30 E	28	1200s	100w	3165		
191	D-225	22 S	30 E	28	1822n	1351w	3257		
192	D-167	22 S	30 E	28	2447s	2652e	3228	250	830.3
193	D-216	22 S	30 E	28	1199.5s	1421.1w	3169	230	769
194	D-224	22 S	30 E	28	1377n	1390e	3269		
195	D-185	22 S	30 E	28	2593n	16e	3284	330	928.4
196	D-228	22 S	30 E	33	1777s	2504w	3127		
197	D-194	22 S	30 E	33	270.6n	1464.9e	3164.25	238	
198	D-226	22 S	30 E	33	2591s	1302w	3109		

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ID	DRILLHOLE_NAME	TOWNSH	RANGE	SECTION	FNSL	FEWL	ELEVAT	CULEBRA	VACATRIST
199	D-221	22 S	30 E	33	1351s	1331e	3134	215	
200	D-199	22 S	30 E	33	2477n	2539e	3121	184	
201	D-170	22 S	30 E	33	2698.76n	2543.21e	3128	190	712.6
202	D-196	22 S	30 E	33	3077n	2540e	3124	183	
203	D-169	22 S	30 E	33	21.8n	69.7w	3144	210	721.4
204	D-195	22 S	30 E	33	2777.16n	2539.67e	3119.95	186.5	
205	D-217	22 S	30 E	33	1294n	1321w	3132	220	
206	D-38	22 S	30 E	33	97n	2551w	3173	240	766.8
207	D-168	22 S	30 E	33	178.5n	243.5e	3179	240	803.9
208	D-218	22 S	30 E	33	1246n	1441e	3143	220	
209	D-36	22 S	30 E	34	280n	325e	3277	360	963.3
210	D-230	22 S	30 E	34	1505n	2672w	3231		
211	D-188	22 S	30 E	34	2621n	67w	3174	230	772
212	D-180	22 S	30 E	34	2944n	2681e	3210	320	843.1
213	USGS 3 (GS 3)	22 S	30 E	34	252s	247w	3152	202	748
214	D-229	22 S	30 E	34	618n	1334w	3218		
215	D-250	22 S	30 E	35	2700s	2450e	3280		
216	D-250-A	22 S	30 E	35	2810s	2503e	3287		981
217	D-249	22 S	30 E	35	2627n	306w	3265		951.2
218	D-160-S	22 S	30 E	36	2464s	1117w	3305	410	1024
219	D-227	23 S	30 E	3	1278n	1184w	3246		
220	MPE-185	30 S	30 E	26	346s	2505e	3530		

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Surface Elevations taken from topo maps. DWP 4/9/82

IDNum	DH Name	Township	Range	Section	FNSL	FEWL	RefElev
1512	Panther City Investment, Inc., Perry Federal No.6	25	32	21	1980n	1980w	3405 ~~3407~~ DWP
5322	Phillips James E Federal No. 9	22	30	11	1060s	10e	~~3407~~ DWP 3378
1237	Atomic Energy Commission, U.S.G.S. Test Hole #1	23	30	34	2640n	2640w	3407
1260	Charles P. Miller, Pauley Harrison State #1	23	31	36	660s	660w	3491
1305	Kirklin Drilling Company, Lea State #1	23	33	31	660n	660e	3605
1325	Southern California Petrol. Corp., Federal Reid #1	24	29	7	2310s	2310e	~~2977~~ DWP 2981
1326	Southern California Petrol. Corp., Federal Reid #2	24	29	7	2310n	2310e	2974
1327	Tennessee Production Comp., Valley Land Company #2	24	29	7	990s	330w	2944
5335	Bryon McKnight & Troporo Campana No. 1	22	31	6	1980n	660w	3358
1328	Tennessee Production Company, Valley Land #3	24	29	7	1650s	1650w	2947
1364	Curtis Hankamer, Hanagan Federal No. 2	24	32	11	660s	1980e	3623
1414	Gulf Oil Corp. & Kirklin Drilling, #1 Lea St. GX	24	33	36	660n	660e	3491
1556	George L. Buckles Co., Federal Marshall No. 1	25	33	21	660n	660e	map not avail.
1549	Hill & Meeker, Jennings-Federal 1-33	25	32	33	2310n	2310w	3346

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Appendix B
Check of Routine Calculations

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Appendix B Notes

This Appendix includes two checkprints. The first checkprint verifies the cell formula for calculating the elevation of the top of the Culebra (reference elevation - depth to Culebra) and the thickness of the interval between the base of the Vaca Triste and the top of the Culebra (base of Vaca Triste - top of Culebra). The second checkprint verifies the cell formula for calculating metric conversions of English units. The conversion factor (feet x 0.3048) is standard, and the results were rounded to the nearest meter.

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Check Print

Source Data Table-B for Task 1, Analysis Plan AP-088

IDNumber	Reference Elevation (m amsl)	Depths (m) from Reference Elevation to Stratigraphic Unit		Elevation (m) of Top of Culebra	Thickness (m) between Top of Culebra and Base of Vaca Triste	Verification of calculation of elevation of top of Culebra (Reference Elevation - Top of Culebra)	Verification of calculation of thickness between top of Culebra and base of Vaca Triste (Base of Vaca Triste-Top of Culebra)
		Base of Vaca Triste	Top of Culebra				
215	1081.1256	539	351	730	188	730	188
216	1055.8272	324	140	916	184	916	184
230	1051.56	424	255	797	169	797	169
232	981.456	201	82	899	119	899	119
452	1045.464	309	134	911	175	911	175
454	1064.0568	365	180	884	185	884	185
455	1055.5224	326	154	902	172	902	172
456	1087.2216	398	207	880	191	880	191
458	1056.7416	342	149	908	193	908	193
459	1062.228	359	165	897	194	897	194

These values have been calculated to verify the calculations made by Excel 97 SR-1 running on a Dell Dimension 400.

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Calculation Check

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Halite Depth Relative to Culebra in Potash Drillholes
Task 1, AP-088

Task	UTMX	UTMY	Base of Culebra (ft)	First Report of Salt (ft)	Depth (ft) to salt below (+) or above (-) base of Culebra	Depth (m) to salt below (+) or above (-) base of Culebra	Verify metric conversion of depth use 0.3048, 0 decimals.
400	618315.84	3598861.13	1220.00	920.00	-300.00	-91	-91
593	618338.90	3597611.78	1180.00	890.00	-290.00	-88	-88
584	619840.65	3598695.43	1360.00	1080.00	-280.00	-85	-85
591	617426.10	3598596.52	1120.00	860.00	-260.00	-79	-79
601	616703.96	3598332.96	1030.00	820.00	-210.00	-64	-64
398	619138.74	3598851.04	1310.00	1120.00	-190.00	-58	-58
588	618790.96	3598422.21	1220.00	1080.00	-140.00	-43	-43
594	616396.03	3597622.49	880.00	760.00	-120.00	-37	-37
597	616787.39	3597175.42	970.00	900.00	-70.00	-21	-21
215	617001.49	3600704.27	1175.00	1120.00	-55.00	-17	-17
589	617610.09	3597195.81	1040.00	990.00	-50.00	-15	-15
642	615204.31	3595695.09	850.00	820.00	-30.00	-9	-9
223	620852.16	3597764.64	1390.00	1390.00	0.00	0	
585	619994.69	3597210.72	1410.00	1410.00	0.00	0	
586	619999.17	3597713.59	1370.00	1370.00	0.00	0	
600	615501.00	3596984.53	930.00	930.00	0.00	0	
646	618614.60	3596165.93	1110.00	1110.00	0.00	0	
684	618524.08	3592363.56	1020.00	1020.00	0.00	0	
608	614344.27	3597990.59	898.00	903.00	5.00	2	2
664	613588.10	3594641.22	622.00	630.00	8.00	2	2
598	615989.82	3598008.50	945.00	955.00	10.00	3	3
599	615192.54	3597576.86	930.00	940.00	10.00	3	3
613	613501.52	3598739.58	865.00	875.00	10.00	3	3

Calculation check of Excel 97 conversion of depth to salt from feet to meters (rounded to meter).

Cell formula g:3 = f:3 * 0.3048 DWB

no decimals needed for this general application. Conversion algorithm (x 0.3048) confirmed

DW Burns 4/11/02

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Appendix C
Location Data

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Appendix C Notes

There are several parts to Appendix C:

1) The first sheet shows two tables in which the method of deriving State Plane X and Y coordinates by plotting locations on 7.5 minute quadrangle maps. The township, range, section information was used to plot and drillhole location. The State Plane X (easting) and Y (northing) coordinates were read from the map grid using an engineer's scale. The sheet shows two attempts, both of which revealed shortcomings, mainly due to readings from the wrong grid coordinates. The solution was to use distinctive color lines for the reference State Plane X and Y coordinates (at 10000 ft intervals). The random, blind check of State Plane X and Y coordinates of 20 drillholes (see Appendix A) did not indicate any problems with this modified approach.
2) The next two tables include recorded State Plane X and Y coordinates read from the map by the method described above.
3) The fourth and fifth tables are 100% checks of the transcription of State X and Y coordinates in the tables listed in 2) above.
4) The sixth through ninth tables are record table and checkprints for the UTM X and Y coordinates obtained for drillholes selected from the report by Richey (1989). The process was identical to that listed in 1) above, except the grid reference was UTM rather than State Plane.
5) The last sheet in this appendix (**UTM Coordinates from Corpscon for Selected Drillholes Compared to UTM Coordinates in Gonzales (1989)**) compares the conversion of State Plane to UTM coordinates by Corpscon to the coordinates included in the report by Gonzales (1989). This is an additional comparison to that included in the text.

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MAP TEST FOR DEVELOPING STATE-PLANE COORDINATES FOR DRILLHOLES

Drillhole	MapX	MapY	GonzalesX	GonzalesY	DiffX	DiffY
H-1	666475	498000	666400	497991	-75	-9
H-2c	663925	497900	663907	498002	-18	102
H-3d	667425	495450	667350	495421	-75	-29
H-4c	662950	488375	662991	487607	41	-768
H-5c	677900	508175	677878	508198	-22	23
H-6c	657300	508875	657232	508884	-68	9
H-7c	648775	475075	648766	475035	-9	-40
H-8c	650375	448625	650409	438581	34	-10044
H-9c	667975	453850	667929	453890	-46	40
H-10c	697600	467575	697550	467513	-50	-62

MapX and MapY coordinates were derrived by plotting the township-range location of the drillhole given in Table 3-5 of Gonzales 1985 on 7.5 minute quadrangle maps. MapX and MapY are state-plane coordinates read from the quadrangle map.
GonzalesX and GonzalesY are state-plane coordinates listed in Table 3-6 of Gonzales 1985.
MapX and MapY values were derrived without knowledge of the GonzalesX and GonzalesY values.
DiffX and DiffY are the calculated differences between MapX and GonzalesX, etc.

The large difference of MapY and GonzalesY for hole H-8c was caused because the state-plane grid lines were not labeled and the value was incorrectly assigned. It is off by approximately 10,000 ft. which is the grid spacing on the map margin.

The difference of MapY and GonzalesY for hole H-4c was caused because the reading was made in error from the UTM grid line from the hand-drawn state-plane grid line.

Corrective action to be taken is to label grid tickmarks prior to making readings.
Corrective action to be taken is to draw state-plane grid lines in a distinctive color.

CALCULATED DISTANCE BETWEEN LOCATION COORDINATES WITH CORRECTIVE VALUES FOR H-4c AND H-8c

Drillhole	MapX	MapY	GonzalesX	GonzalesY	DiffX	DiffY	Distance
H-1	666475	498000	666400	497991	-75	-9	75.53807
H-2c	663925	497900	663907	498002	-18	102	103.5761
H-3d	667425	495450	667350	495421	-75	-29	80.41144
H-4c	662950	487600	662991	487607	41	7	41.59327
H-5c	677900	508175	677878	508198	-22	23	31.82766
H-6c	657300	508875	657232	508884	-68	9	68.593
H-7c	648775	475075	648766	475035	-9	-40	41
H-8c	650375	438625	650409	438581	34	-44	55.60576
H-9c	667975	453850	667929	453890	-46	40	60.959
H-10c	697600	467575	697550	467513	-50	-62	79.64923

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~~Checkpoint~~ of additional State X+Y DWP – Checked on ckprint / of Transcription DWB 4/16/02

1071	Texas International Petrol. Corp., Lowe Federal #1			20	30	31 1980n	760e
1073	Pennzoil United, Big Eddy Unit No. 12			20	31	21 660n	660w
1072	Pan American Petroleum Corp., Big Eddy Unit #11	632900	576850	20	31	7 1650s	660e
1074	Shell Oil Company, Perry Federal #1			20	32	10 330n	990w
1076	Phillips Petroleum Company, Plata Deep Unit #1			20	32	15 1980s	1980w
215	NF-23-F	678525	560375	20	32	27 1000s	2640w
1075	Flag-Redfern Oil Company, Hanson State #1			20	32	13 660s	1980w
1080	Randall F. Montgomery, Bass State #2			20	33	18 1650n	1650w
1079	Randall F. Montgomery, Bass State #1			20	33	18 660n	2080w
1077	Pan American Petroleum Corp., Little Eddy Unit #1			20	33	5 660s	1980w
1078	Carl Engwall, Sinclair Federal #1			20	33	14 2310s	990w
1081	Amoco Prod. Co., API #30-025-26241, Fed.Y Com #1			20	33	27 1980n	1650e
1090	Pan American Petroleum Corp., Big Eddy Unit #18			21	29	3 1980n	1980w
1091	Union Oil Co. of California, Cowden Federal #1			21	29	4 4620s	1980w
1092	Meadco Properties, Ltd., Harris-Bell #1			21	29	5 1980n	660e
1093	Meadco Properties Ltd., Harris Bell #2			21	29	5 980n	1880w
1094	Meadco Properties Ltd., Harris 6 #1			21	29	6 3147n	660e
216	D-159	646200	545050	21	30	11 1220n	100w
456	U-144	648650	553125	21	30	2 995.6n	2477.8w
217	U-75	641735	536100	21	30	15 450s	690w
218	MPE-186	651250	535350	21	30	23 1498s	285e
219	MPE-185	649025	525500	21	30	26 346s	2505e
220	MPE-179	643800	529750	21	30	27 645n	2486e
221	MPE-179-A	643806	529750	21	30	27 645n	2480e
311	K-119	665925	542200	21	31	8 1320s	1320e
597	K-101	677750	548800	21	31	3 2640s	50e
222	MPE-183	678100	~~519990~~ cmm 519975	21	31	35 183s	136w
1117	Gulf Oil Corporation, H.T. Mattern (NCT) #10			21	32	31 660n	1980w
223	K-140	691100	550650	21	32	6 3568n	2777w
1110	Holly Energy, Inc., Salt Lake Deep No. 1	693200	552000	21	32	6 2189n	500e
1116	Gulf Oil Corporation, San Simon #1	714250	528750	21	32	26 1980n	660e
1109	Amini Oil Company, New Mexico Federal #1	700625	552500	21	32	4 1683n	1650w
1111	The Superior Oil Company, Government H Com. #1	707700	544500	21	32	10 1980n	1980e
1105	Phillips Petroleum Company, ETZ Federal #1	718125	551150	21	32	1 3255n	1972e
1113	Phillips Petroleum Company, Hat Mesa 2-#2	711600	cmm 541900	21	32	11 660s	1980w
1108	Amini Oil Company, Pubco Federal #1	cmm ~~710095~~ ~~710075~~ X:710175	Y:551000	21	32	2 3300n	660w
1106	Kimball Production Company, Federal #1	716850	547150	21	32	1 660s	1980w
1114	Phillips Petroleum Company, Hat Mesa #1	712900	544500	21	32	11 1980n	1980e
1112	Gackle Drilling Company, Federal #1	714300	541900	21	32	11 660s	660e
1107	Phillips Petroleum Company, Hat Mesa A #1	712900	547100	21	32	2 660s	1980e
1629	Amoco Production Company State LT #1	727500	522200	21	33	32 1980s	1980w
1120	Charles Read, Sinclair State #1			21	33	2 2310s	2310w
1628	Getty Oil Company Stock Unit #1	739300	538050	21	33	15 1980s	1980e

Strata 2a mins

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225	IMCC Water Test #2	621750	513150		22	29	12 1386n	2310w
226	IMCC Water Test #1	622044	513466		22	29	12 1070n	2604w
224	IMCC Water Test #3	621693	512772		22	29	12 1764n	1959w
227	I-323	639250	515850		22	30	4 1324s	1518e
812	D-198	643625	493475		22	30	27 38s	2643w
228	U-97	643639	493461		22	30	9 301s	305w
229	D-250	649300	490875		22	30	35 2700s	2450e
870	D-250-A	649247	490985		22	30	35 2810s	2503e
1631	Dual Production Co. Richardson-Bass State No. 1	730500	515575		22	33	5 660s	330e
907	D-227	642275	486850		23	30	3 1278n	1184w
1278	Curtis Hankamer, Hankamer No.1 Continental Federal	689600	457200		23	32	31 660s	660w
1268	Curtis Hankamer, Gulf-Federal A-A #1	702825	471850		23	32	21 660n	1980e
1285	John H. Trigg, Federal WL No. 2-35	714425	460450		23	32	35 1650n	990e
1273	John H. Trigg, Federal WL #3-26	715100	462200		23	32	26 330s	330e
1299	Continental Oil Company, Marshall #3	722500	468000		23	33	19 660s	1980w
1390	Charles B. Read, Bradley #3	714900	440200		24	32	23 660n	660e
1359	Calco, Marathon State #1	712209	454600		24	32	2 1990n	1990w
1403	David Fasken, Gulf State #7-2	723000	449250		24	33	7 2310n	2310w
1426	J. Glen Bennett, Superior #1-8				25	29	8 980n	660w
1446	Ralph Lowe, #1-X R&B Federal A				25	30	17 610n	610w
1447	Alamo Corporation, Poker Lake Unit #11A-7				25	30	17 660s	660w
1441	Ralph Lowe, T&P State #1				25	30	8 660n	660w
1443	Ralph Lowe, Poker Lake State #3				25	30	8 1980s	660w
1454	Central States Oil Company, Poker Lake Unit No. 38				25	30	19 330n	900e
1444	Alamo Corporation, Poker Lake Unit #5X-1A				25	30	10 660s	645w
1439	Ralph Lowe, Poker Lake State #1				25	30	8 663s	667w
1442	Ralph Lowe, Superior State #1				25	30	8 1980s	1980w
1452	Ralph Lowe, R&B Federal #1				25	30	18 660n	660e
1458	Alamo Corporation, Poker Lake Unit #6-2A				25	30	21 660n	660e
1462	J.A. Leonard, Continental State No. 1				25	31	32 660n	660w
1506	Texaco Incorporated, Cotton Draw Unit #64				25	32	18 660n	1650w
1498	Tenneco Oil Company, Monsanto State #8				25	32	16 1660s	990w
1518	Perry R. Bass, Perry Federal #43				25	32	21 330s	330e
1532	Texaco Incorporated, G.E. Jordan Federal No. 4				25	32	25 660s	1980w
1538	Texaco Incorporated, Cotton Draw Unit No. 54				25	32	28 1980n	2310e

Data entered 4/6/02 CMM

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD
U-30	20 S	31 E	14	2140s	500w	650525	571950
U-75-A	21 S	30 E	15	450s	700w	641725	536100
K-118	20 S	32 E	8	1320s	1320w	666675	576500
K-113	20 S	32 E	35	50s	1100e	685500	554250
K-112	20 S	32 E	35	100s	1500w	682800	554300
Wills-10-A (W-10A)	21 S	30 E	1	1116s	827e	655875	547400
Wills 10	21 S	30 E	1	1116s	817e	~~655875~~ DUP	547400
D-131	21 S	30 E	1	2985n	1411w	~~652400~~ DUP	551050
U-126	21 S	30 E	2	180s	2459w	648625	546500
US Potash (U-0)	21 S	30 E	2	2691s	250w	646400	549000
D-157	21 S	30 E	3	745s	1549w	642425	547000
U-91	21 S	30 E	3	4242n	1080w	642000	549750
Wills #13 (W-13)	21 S	30 E	3	979s	2434e	643750	547300
Wills-9 (W-09)	21 S	30 E	3	3918n	1017e	645125	550125
Wills 14 (W-14)	21 S	30 E	3	1259n	1331e	644750	552800
D-158	21 S	30 E	10	1776s	1935w	642800	542800
Wills 12 (W-12)	21 S	30 E	10	2170n	1457e	644675	544100
US Potash #1 Aray McNutt J (U-S)	21 S	30 E	10	2340.82s	150w	641025	543350
FC-62	21 S	30 E	10	707s	707e	645450	541725
D-112	21 S	30 E	10	1083n	810w	641675	545150
Wills 11	21 S	30 E	11	2595s	1940e	649500	543600
D-152	21 S	30 E	11	1261s	1417w	647575	542300
D-156	21 S	30 E	11	1237n	1268w	647425	545075
U-63	21 S	30 E	13	2960n	340w	651850	538000
K-159	21 S	30 E	18	1200s	200e	630125	536775
FC-80	21 S	30 E	24	580n	470e	656400	535225
Crosby #1 (RC-01)	21 S	30 E	25	1098s	969w	652500	526250
Crosby #2 (RC-02)	21 S	30 E	26	983n	1364w	647650	529450
I-123	21 S	30 E	34	1320n	2640w	643650	523800
K-109	21 S	31 E	1	500n	500e	687800	553725
K-138	21 S	31 E	1	5351n	50e	688275	548850
K-137	21 S	31 E	1	3650n	25e	688300	550500
K-133	21 S	31 E	1	1320n	1320w	684350	552850
NF-51-F	21 S	31 E	2	2640s	2640w	680450	548850
FC-58	21 S	31 E	2	3500n	700w	678475	~~550550~~ DUP
K-107	21 S	31 E	2	750n	2050w	679875	553450
NMP-163	21 S	31 E	2	50s	2600w	680425	546175
K-111	21 S	31 E	2	4000n	100e	682850	550200
K-102	21 S	31 E	3	4040s	1350e	676475	550275

XCOORD 655885
IC 652775

See map w/dh loc ~200' from here.

Y: 550550

Data from Potash 08

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD	
NF-50-F	21 S	31 E	3	2550s	2640w	675150	548675	
K-100	21 S	31 E	3	0s	2540e	675300	546150	
FC-57	21 S	31 E	3	2600n	2640w	675150	551550	
FC-55	21 S	31 E	3	3960s	50w	672525	550150	
K-99	21 S	31 E	3	2100s	900w	673525	548200	
K-103	21 S	31 E	3	1600n	350e	677500	552600	map shows dh 400'e, in sec 2
FC-64	21 S	31 E	4	680n	2560e	~~666~~ 669	553470	X669950
FC-54	21 S	31 E	4	50s	2640w	669900	546200	
FC-83	21 S	31 E	4	1500s	700e	671800	547675	
FC-85	21 S	31 E	4	1317s	1302w	668500	547475	
NF-49-F	21 S	31 E	4	2642s	2640w	669825	548700	
FC-64-A	21 S	31 E	4	700n	2560e	669950	553450	map shows dh 200 e of location
NF-53-F	21 S	31 E	4	2640n	2643w	669750	551525	
FC-74	21 S	31 E	4	1026s	2549e	669950	547200	
NF-22-F	21 S	31 E	5	875s	350w	662300	547025	
FC-87	21 S	31 E	5	2010s	755e	666450	548150	
NF-21-F	21 S	31 E	5	3960s	300e	666850	550050	
NF-41-F	21 S	31 E	5	100n	60e	667000	554000	
NF-19-F	21 S	31 E	5	100s	100w	662050	546200	
FC-60	21 S	31 E	5	2600n	2625w	664525	551475	
FC-56	21 S	31 E	5	1980s	2640w	664550	548100	
NF-8-F	21 S	31 E	5	100s	100e	667150	546275	
NF-03-F	21 S	31 E	5	125n	2639e	664425	554000	
FC-90	21 S	31 E	5	1102s	1642e	665600	547250	
NF-24-F	21 S	31 E	5	3960n	1000w	662900	550125	
NF-48-F	21 S	31 E	6	3960n	1500e	660400	550125	
NF-37-F	21 S	31 E	7	2641s	100e	661850	543400	
NF-39-F	21 S	31 E	7	2641s	2640e	659300	543400	
K-117	21 S	31 E	7	1320s	1320e	~~665925~~ 660675	~~542200~~ 542125	X660675 Y542125
K-115	21 S	31 E	7	1320n	1320e	660675	544700	
FC-88	21 S	31 E	8	1375n	1395e	665800	544775	
NF-30-F	21 S	31 E	8	2640n	2640e	664650	543425	
FC-89	21 S	31 E	8	200n	2600e	664600	545875	
K-116	21 S	31 E	8	1320n	1320w	663300	544650	
NF-35-F	21 S	31 E	8	238s	238w	662250	541075	
FC-61	21 S	31 E	9	50s	2642w	669900	541000	
FC-86	21 S	31 E	9	968n	1676w	668925	545150	
K-95	21 S	31 E	9	1260s	1000e	671525	542150	Map shows dh 500'e of location
FC-84	21 S	31 E	8	558n	1241e	671250	545625	

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD	
NF-32-F	21 S	31 E	9	1983n	330w	667600	544125	
NF-31-F	21 S	31 E	9	2000n	2000e	670500	544125	
NF-44-F	21 S	31 E	10	2640s	2640w	675200	543550	
NF-42-F	21 S	31 E	10	330n	320w	672850	545825	
K-94	21 S	31 E	10	2240n	0w	672525	543975	
NF-38-F	21 S	31 E	10	228s	2644e	675125	541150	
FC-59	21 S	31 E	11	300n	300w	678100	545850	
K-139	21 S	31 E	12	800n	600w	683725	545450	
NMP-153 (K-153)	21 S	31 E	13	70s	70e	688300	535800	
FC-72	21 S	31 E	14	2640s	2640w	680575	538275	
FC-71	21 S	31 E	14	141n	141w	677925	540700	
FC-67	21 S	31 E	14	141s	141w	677950	535700	
FC-73	21 S	31 E	14	141s	141e	682950	535775	
NF-36-F	21 S	31 E	15	2590n	2642e	675050	538150	
NF-33-A	21 S	31 E	15	70n	528w	673175	540825	
NF-46-F	21 S	31 E	16	2640n	2640e	669800	538175	Map shows dh 350'NW of location
FC-75	21 S	31 E	16	250s	250w	667450	535700	
KP-96	21 S	31 E	16	1300n	1000e	671525	539500	
KP-97	21 S	31 E	16	1400s	500e	672075	537000	Map shows dh 300'NE of location
NF-45-F	21 S	31 E	17	318n	84e	667200	540550	
FC-77	21 S	31 E	17	2600s	2600e	664700	538150	
NMP-161	21 S	31 E	18	2500s	2500e	659900	538000	
NMP-160 (K-160)	21 S	31 E	18	1700n	1300w	658100	539000	
FC-79	21 S	31 E	19	2400s	2400e	659650	532625	Map shows dh 400'ESE of location
NMP-165	21 S	31 E	20	20s	2640e	664725	530300	
FC-78	21 S	31 E	20	2450s	2450e	664825	532700	
NMP-166	21 S	31 E	20	50s	50w	662100	530300	
K-98	21 S	31 E	21	160n	2282e	670300	535350	
FC-76	21 S	31 E	21	2640n	2626w	669950	532875	
NMP-164	21 S	31 E	21	50s	50w	667400	530350	
NFU-40-F	21 S	31 E	22	200n	668w	673275	535300	
NF-43-F	21 S	31 E	22	2640n	2640w	675325	532775	
NMP-156 (K-156)	21 S	31 E	23	250s	250e	682900	530650	
NMP-155 (K-155)	21 S	31 E	24	1700s	70e	688325	531700	
KP-93	21 S	31 E	24	2740n	200w	683350	532975	map shows dh 400'SE of loc.
NMP-154 (K-154)	21 S	31 E	24	1800n	2500e	685850	533900	
NMP-157 (K-157)	21 S	31 E	26	500s	2000w	679875	525550	
NMP-167	21 S	31 E	27	2630n	2650e	675250	527650	map shows dh 300'NE of loc.
FC-66	21 S	31 E	27	300n	200w	672700	530000	

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD	
NMP-168	21 S	31 E	28	2640n	2640e	669975	527575	
USP-135	21 S	31 E	28	300s	600w	668025	525425	
NMP-170	21 S	31 E	29	2640n	20e	667325	527650	
NMP-169	21 S	31 E	29	2640s	2640e	664700	527650	
Wills-8 (W-8)	21 S	31 E	30	2667s map	2064w dwg	657000	527650	
Wills-7	21 S	31 E	31	264n	471w	657300	524700	
FC-63	21 S	31 E	32	300n	2540w	664650	524700	
FC-68	21 S	31 E	32	141s	141e	667300	519900	
FC-65	21 S	31 E	34	100s	100w	672750	519800	
NF-52-F	21 S	31 E	34	250n	2208e	675675	524800	Map shows dh 250'SE of bc (FC-69) cmm
FC-69	21 S	31 E	34	141n	150w	672775	524825	
D-96	22 S	30 E	3	693n	977e	645200	519150	
U-168	22 S	30 E	3	1320s	300e	645900	515900	
Gypsy #3 (GO-03)	22 S	30 E	4	150n	400e	640400	519625	
U-167	22 S	30 E	4	1320s	200e	640675	515825	
NM Potash #1 / Lomasson 1 (I-A)	22 S	30 E	6	1998.1s	2193.3w	628800	516600	
NM Potash #3A / Lommasson Test	22 S	30 E	6	3413s	4645w	629275	518000	
NM Potash #2/Lommasson #2 (I-B)	22 S	30 E	6	3311.4s	2561.7w	627200	~~5190~~ cmm	Y:517900
Gypsy Oil #4 (GO-04)	22 S	30 E	8	756s	756w	630850	510050	
U-163-S	22 S	30 E	9	1320n	2640w cmm	638050	513325	
U-97-A	22 S	30 E	9	315s	219w	635775	509650	
I-322	22 S	30 E	9	2406n	578w	635900	512150	
I-326	22 S	30 E	9	215n	783w	636225	514400	
D-82	22 S	30 E	10	1883n	2574e	643625	512650	
D-121	22 S	30 E	11	1247s	1302w	647500	510525	
D-120	22 S	30 E	13	1562n	1565w	653125	507725	
D-48	22 S	30 E	14	134s	2039e	649500	504175	
I-147	22 S	30 E	20	1320s	1320e	~~631500~~ cmm	~~499950~~ cmm	X:634100 Y:499990
NM Potash & Chemical #1 (I-D)	22 S	30 E	20	754.5n	1568.9w	631650	503200	
IMCC #145 (I-145)	22 S	30 E	20	1320n	1320e	634150	502700	
IMCC # 143 (I-143)	22 S	30 E	20	1320n	1320w	631425	502700	
I-114	22 S	30 E	20	1320s	1320w	631500	499950	
D-33	22 S	30 E	21	109s	81e	640800	498850	
I-111	22 S	30 E	21	1320n	2640e	638175	502650	
I-112	22 S	30 E	21	1320s	1320w	636900	500050	
D-263	22 S	30 E	22	2563n	272e	645950	501475	
D-264	22 S	30 E	22	2585n	2551e	643700	502000	
D-259	22 S	30 E	23	1873s	1144e	650400	500700	
D-261	22 S	30 E	23	407n	1513w	647750	503625	

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD
D-262	22 S	30 E	23	213n	70w	646300	503875
D-202	22 S	30 E	23	1289.12s	1202.48w	647375	499950
D-260	22 S	30 E	23	1093n	789e	650775	~~504675~~ Y:503000
D-255	22 S	30 E	23	104s	1303e	650250	~~48~~ cmm Y:498800
D-258	22 S	30 E	23	1508n	2677e	648900	502500
D-104	22 S	30 E	24	2585n	1394e	655500	501500
D-235	22 S	30 E	25	2878s	789w	652375	496450
D-203	22 S	30 E	26	2650s	1276.3e	650350	496050
D-254	22 S	30 E	26	300n	2100w	648400	498400
D-233	22 S	30 E	26	4810s	13w	646300	498400
D-234	22 S	30 E	26	188s	4712w	651000	493650
D-200	22 S	30 E	27	540s	20w	641000	494100
D-181	22 S	30 E	27	2664s	2625e	643750	496200
D-231	22 S	30 E	27	2370s	224e	646100	495900
D-232	22 S	30 E	27	1326s	1366w	642350	494800
D-224	22 S	30 E	28	1377n	1390e	639500	497375
D-219	22 S	30 E	28	1221s	1237e	639750	494650
D-216	22 S	30 E	28	1199.5s	1421.1w	637000	494600
D-185	22 S	30 E	28	2593n	16e	641000	~~4960~~ cmm Y:496100
D-167	22 S	30 E	28	2447s	2652e	638350	495850
D-225	22 S	30 E	28	1822n	1351w	637000	496800
D-278	22 S	30 E	28	1200s	100w	635700	494600
D-199	22 S	30 E	33	2477n	2539e	638400	491000
D-218	22 S	30 E	33	1246n	1441e	639500	492150
D-196	22 S	30 E	33	3077n	2540e	638500	490400
D-221	22 S	30 E	33	1351s	1331e	639800	489500
D-195	22 S	30 E	33	2777.16n	2539.67e	638600	490750
D-194	22 S	30 E	33	270.6n	1464.9e	639600	493300
D-217	22 S	30 E	33	1294n Diff	1321w Diff	637000	492100
D-170	22 S	30 E	33	2698.76n	2543.21e	638500	490800
D-38	22 S	30 E	33	97n	2551w	638250	493300
D-168	22 S	30 E	33	178.5n	243.5e	640800	493250
D-169	22 S	30 E	33	21.8n	69.7w	635700	493300
D-228	22 S	30 E	33	1777s Diff	2504w Diff	638200	489975
D-226	22 S	30 E	33	2591s	1302w	637100	490750
D-180	22 S	30 E	34	2944n	2681e	643700	490500
D-188	22 S	30 E	34	2621n	67w	641150	490900
D-230	22 S	30 E	34	1505n	2672w	642250	494700
D-36	22 S	30 E	34	280n	325e	646000	493150

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DRILLHOLE_NAME	TOWNSHIP	RANGE	SECTION	FNSL	FEWL	XCORD	YCORD
USGS 3 (GS 3)	22 S	30 E	34	252s	247w	641350	488450
D-229	22 S	30 E	34	618n	1334w	642400	492875
D-249	22 S	30 E	35	2627n	306w	646675	490775
D-160-S	22 S	30 E	36	2464s	1117w	652750	490650

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Checkprint 1 of transcription of StateX + StateY for new potash holes + some org drillholes w/o X,Y from Dave Hughes WIPP database

ID Number	Drillhole name	StateX (NAD27)	StateY (NAD27)	Township	Range	Section
1070	Amoco Prod., Federal Gas Com No. 1-G	610700	566400	20	30	21
1071	Texas International Petrol. Corp., Lowe Federal #1			20	30	31
1072	Pan American Petroleum Corp., Big Eddy Unit #11	632900	576850	20	31	7
230	U-30	650525	571950	20	31	14
1073	Pennzoil United, Big Eddy Unit No. 12			20	31	21
1074	Shell Oil Company, Perry Federal #1			20	32	10
1075	Flag-Redfern Oil Company, Hanson State #1			20	32	13
1076	Phillips Petroleum Company, Plata Deep Unit #1			20	32	15
215	NF-23-F	678525	560375	20	32	27
398	K-113	685500	554250	20	32	35
400	K-112	682800	554300	20	32	35
1077	Pan American Petroleum Corp., Little Eddy Unit #1			20	33	5
1078	Carl Engwall, Sinclair Federal #1			20	33	14
1079	Randall F. Montgomery, Bass State #1			20	33	18
1080	Randall F. Montgomery, Bass State #2			20	33	18
1081	Amoco Prod. Co., API #30-025-26241, Fed.Y Com #1			20	33	27
1090	Pan American Petroleum Corp., Big Eddy Unit #18			21	29	3
1091	Union Oil Co. of California, Cowden Federal #1			21	29	4
1092	Meadco Properties, Ltd., Harris-Bell #1			21	29	5
1093	Meadco Properties Ltd., Harris Bell #2			21	29	5
1094	Meadco Properties Ltd., Harris 6 #1			21	29	6
1095	Perry R. Bass, Big Eddy Unit #61	610776	537608	21	29	15
1096	Pan American Petroleum Corp., Big Eddy Unit #16	596276	537559	21	29	18
1097	Perry R. Bass, Big Eddy Unit No. 40	612098	533654	21	29	22
1098	Bass Enterprises Prod. Co., Big Eddy Unit No. 38	610799	524446	21	29	34
452	Wills-10-A (W-10A)	655875	547400	21	30	1
453	Wills 10	655885	547400	21	30	1
454	D-131	652775	551050	21	30	1
455	U-126	648625	546500	21	30	2
456	U-144	648650	553125	21	30	2
457	US Potash (U-0)	646400	549000	21	30	2
458	D-157	642425	547000	21	30	3
459	U-91	642000	549750	21	30	3
460	Wills #13 (W-13)	643750	547300	21	30	3
461	Wills-9 (W-09)	645125	550125	21	30	3
462	Wills 14 (W-14)	644750	552800	21	30	3
500	D-158	642800	542800	21	30	10
501	Wills 12 (W-12)	644675	544100	21	30	10
502	US Potash #1 Aray McNutt J (U-S)	641025	543350	21	30	10
503	FC-62	645450	541725	21	30	10
504	D-112	641675	545150	21	30	10
216	D-159	646200	545050	21	30	11
505	Wills 11	649500	543600	21	30	11
507	D-152	647575	542300	21	30	11
508	D-156	647425	545075	21	30	11
510	U-63	651850	538000	21	30	13
523	K-159	630125	536775	21	30	13
217	U-75	641735	536100	21	30	15
232	U-75-A	641725	536100	21	30	15
5301	WC Blanks Big Eddy Unit No. 67	641866	537582	21	30	15

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5059	Bass Big Eddy Unit No. 44	640217	538905	21	30	16
5060	Bass Big Eddy No. 45-Y	640127	538904	21	30	16
1099	WIPP 27	637103	535612	21	30	21
218	MPE-186	651250	535350	21	30	23
550	FC-80	656400	535225	21	30	24
551	Crosby #1 (RC-01)	652500	526250	21	30	25
219	MPE-185	649025	525500	21	30	26
552	Crosby #2 (RC-02)	647650	529450	21	30	26
5061	Phillips James "D" No. 1	648187	525723	21	30	26
220	MPE-179	643800	529750	21	30	27
221	MPE-179-A	643806	529750	21	30	27
5062	Yates Kaleidoscope "AIO" Federal No. 1	640263	523060	21	30	33
583	I-123	643650	523800	21	30	34
5063	Yates Julia "AJL" Federal No. 4	644237	523079	21	30	34
5302	Yates Cabin Lake 34 Federal No. 1	645242	520102	21	30	34
5064	Phillips Peak View No. 1	651176	520437	21	30	35
5065	Phillips James "C" No. 1	646880	521743	21	30	35
5066	C. Grace Livingston Ridge No. 1-Y	652480	521752	21	30	36
5303	C Grace Salomeh No. 1	651831	520109	21	30	36
584	K-109	687800	553725	21	31	1
585	K-138	688275	548850	21	31	1
586	K-137	688300	550500	21	31	1
588	K-133	684350	552850	21	31	1
589	NF-51-F	680450	548850	21	31	2
590	FC-58	678475	550550	21	31	2
591	K-107	679875	553450	21	31	2
593	K-111	682850	550200	21	31	2
594	K-102	676475	550275	21	31	3
595	NF-50-F	675150	548675	21	31	3
596	K-100	675300	546150	21	31	3
597	K-101	677750	548800	21	31	3
598	FC-57	675150	551550	21	31	3
599	FC-55	672525	550150	21	31	3
600	K-99	673525	548200	21	31	3
601	K-103	677500	552600	21	31	3
602	FC-64	669950	553470	21	31	4
603	FC-54	669900	546200	21	31	4
604	FC-83	671800	547675	21	31	4
605	FC-85	668500	547475	21	31	4
606	NF-49-F	669825	548700	21	31	4
607	FC-64-A	669950	553450	21	31	4
608	NF-53-F	669750	551525	21	31	4
609	FC-74	669950	547200	21	31	4
610	NF-22-F	662300	547025	21	31	5
611	FC-87	666450	548150	21	31	5
612	NF-21-F	666850	550050	21	31	5
613	NF-41-F	667000	554000	21	31	5
614	NF-19-F	662050	546200	21	31	5
615	FC-60	664525	551475	21	31	5
616	FC-56	664550	548100	21	31	5
617	NF-8-F	667150	546275	21	31	5
618	NF-03-F	664425	554000	21	31	5
619	FC-90	665600	547250	21	31	5
620	NF-24-F	662900	550125	21	31	5
623	NF-48-F	660400	550125	21	31	6
624	NF-37-F	661850	543400	21	31	7

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625	NF-39-F	659300	543400	21	31	7
626	K-117	660675	542125	21	31	7
627	K-115	660675	544700	21	31	7
307	K-118 663300 542350	666675	576500	21	31	8 *
311	K-119	665925	542200	21	31	8
628	FC-88	665800	544775	21	31	8
629	NF-30-F	664650	543425	21	31	8
630	FC-89	664600	545875	21	31	8
631	K-116	663300	544650	21	31	8
632	NF-35-F	662250	541075	21	31	8
633	FC-61	669900	541000	21	31	9
634	FC-86	668925	545150	21	31	9
635	K-95	671525	542150	21	31	9
636	FC-84	671250	545625	21	31	9
637	NF-32-F	667600	544125	21	31	9
638	NF-31-F	670500	544125	21	31	9
640	NF-44-F	675200	543550	21	31	10
641	NF-42-F	672850	545825	21	31	10
642	K-94	672525	543975	21	31	10
643	NF-38-F	675125	541150	21	31	10
645	FC-59	678100	545850	21	31	11
646	K-139	683725	545450	21	31	12
649	NMP-153 (K-153)	688300	535800	21	31	13
650	FC-72	680575	538275	21	31	14
651	FC-71 677925	~~679925~~	540700	21	31	14
652	FC-67	677950	535700	21	31	14
653	FC-73	682950	535775	21	31	14
656	NF-36-F	675050	538150	21	31	15
657	NF-33-A	673175	540825	21	31	15
660	NF-46-F	669800	538175	21	31	16
661	FC-75	667450	535700	21	31	16
662	KP-96	671525	539500	21	31	16
663	KP-97	672075	537000	21	31	16
664	NF-45-F	667200	540550	21	31	17
665	FC-77	664700	538150	21	31	17
666	NMP-161	659900	538000	21	31	18
667	NMP-160 (K-160)	658100	539000	21	31	18
668	FC-79	659650	532625	21	31	19
669	NMP-165	664725	530300	21	31	20
670	FC-78	664825	532700	21	31	20
671	NMP-166	662100	530300	21	31	20
592	NMP-163	680425	546175	21	31	21
673	K-98	670300	535350	21	31	21
674	FC-76	669950	532875	21	31	21
676	NMP-164	667400	530350	21	31	21
677	NFU-40-F	673275	535300	21	31	22
678	NF-43-F	675325	532775	21	31	22
682	NMP-156 (K-156)	682900	530650	21	31	23
683	NMP-155 (K-155)	688325	531700	21	31	24
684	KP-93	683350	532975	21	31	24
685	NMP-154 (K-154)	685850	533900	21	31	24
5079	Yates "AJA" Federal No. 7	688026	531008	21	31	24
5080	Yates Bonneville "AKK" Federal No. 2	688186	530998	21	31	24
5081	Yates Wolf "AJA" Federal No. 5	688045	528376	21	31	25
5082	Yates Wolf "AJA" Federal No. 4	688059	527034	21	31	25
5304	Maralo MR "25" Federal No. 1	687611	525719	21	31	25

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686	NMP-157 (K-157)	✓679875	✓525550	21	31	26
5305	Pogo Federal No. 1	679839	528315	21	31	26
688	NMP-167	✓675250	✓527650	21	31	27
689	FC-66	✓672700	✓530000	21	31	27
690	NMP-168	✓669975	✓527575	21	31	28
691	USP-135	✓668025	✓525425	21	31	28
692	NMP-170	✓667325	✓527650	21	31	29
693	NMP-169	✓664700	✓527650	21	31	29
694	Wills-8 (W-8)	✓657000	✓527650	21	31	30
695	Wills-7	✓657300	✓524700	21	31	31
696	FC-63	✓664650	✓524700	21	31	32
697	FC-68	✓667300	✓519900	21	31	32
1103	WIPP 30	667536	524337	21	31	33
698	FC-65	✓672750	✓519800	21	31	34
699	NF-52-F	✓675675	✓524800	21	31	34
700	FC-69	✓672775	✓524825	21	31	34
222	MPE-183	✓678100	✓519975	21	31	35
1104	ERDA 6	682279	521970	21	31	35
1104	ERDA 6	682279	521970	21	31	35
5306	Union Federal FI No. 1	678521	524326	21	31	35
5068	Yates Mary "AIV" State No. 5	688075	524406	21	31	36
5069	Yates Mary "AIV" State No. 3	686429	524399	21	31	36
5070	Yates Mary "AIV" State No. 1	686437	523087	21	31	36
5071	Yates Lost Tank "AIS" State No. 8	687770	520448	21	31	36
5072	Yates Lost Tank "AIS" State No. 6	686445	521756	21	31	36
5073	Yates Lost Tank "AIS" State No. 5	683807	520428	21	31	36
5075	Yates Lost Tank "AIS" State No. 3	685127	520435	21	31	36
5076	Yates Lost Tank "AIS" State No. 2	686453	520440	21	31	36
5307	Yates Lost Tank "AIS" State No. 1	687762	521764	21	31	36
5308	Yates Lost Tank "AIS" State No. 4	685122	521752	21	31	36
1105	Phillips Petroleum Company, ETZ Federal #1	✓718125	✓551150	21	32	1
1106	Kimball Production Company, Federal #1	✓716850	✓547150	21	32	1
1107	Phillips Petroleum Company, Hat Mesa A #1	✓712900	✓547100	21	32	2
1108	Amini Oil Company, Pubco Federal #1	✓710175	✓551000	21	32	2
1109	Amini Oil Company, New Mexico Federal #1	✓700625	✓552500	21	32	4
223	K-140	✓691100	✓550650	21	32	6
1110	Holly Energy, Inc., Salt Lake Deep No. 1	✓693200	✓552000	21	32	6
1111	The Superior Oil Company, Government H Com. #1	✓707700	✓544500	21	32	10
1112	Gackle Drilling Company, Federal #1	✓714300	✓541900	21	32	11
1113	Phillips Petroleum Company, Hat Mesa 2-#2	✓711600	✓541900	21	32	11
1114	Phillips Petroleum Company, Hat Mesa #1	✓712900	✓544500	21	32	11
5264	Belco Federal HM No. 1	715700	543100	21	32	12
5309	Belco Federal "HM" No. 13-1	716900	540250	21	32	13
5310	Collins & Ware N.L. Federal No. 2	691747	536332	21	32	18
5311	Getty North Bilbrey 18 Federal No. 1	691724	538989	21	32	18
5312	Skelly Salt Lake South Unit No. 1	699664	535095	21	32	21
5313	Santa Fe Bilbrey "21" Federal Com. No. 1	702335	531157	21	32	21
5314	Santa Fe Bilbrey "22" Federal Com. No. 1	707257	531208	21	32	22
1116	Gulf Oil Corporation, San Simon #1	✓714250	✓528750	21	32	26
5315	Collins & Ware Lincoln Federal No. 1	710253	527301	21	32	26
5279	Santa Fe Bilbrey Federal No. 1-A	706307	528583	21	32	27
5316	Santa Fe Bilbrey 27 Federal Com. No. 1	705323	527224	21	32	27
5278	Santa Fe Bilbrey Federal No. 1	703668	528559	21	32	28
5280	Santa Fe Bilbrey Federal No. 1-A	701038	527167	21	32	28
5277	Getty Bilbrey Federal Com No. 1	695745	527104	21	32	29
1117	Gulf Oil Corporation, H.T. Mattern (NCT) #10			21	32	31

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5272	Phillips Luke Federal No. 2	689062	524415	21	32	31
5273	Pogo Federal No. 1	693156	522136	21	32	31
5274	Collins & Ware BW Federal No. 1	688762	520119	21	32	31
5275	Phillips Luke Federal No. 1	689070	523103	21	32	31
5276	AEC No. 7	691829	523133	21	32	31
5265	Getty State Com No. 1	697111	523186	21	32	32
5317	Texaco Bilbrey 32 State Com. No. 1	695776	523170	21	32	32
5266	Texaco Bilbrey Federal Com No. 1	701049	524549	21	32	33
5267	Texaco Bilbrey Federal No. 2	701403	521883	21	32	33
5268	Phillips Bilbrey Federal No. 1	706351	520629	21	32	34
5269	Maralo Bilbrey Federal No. 1	706324	524620	21	32	34
5270	Gulf Chaney Federal No. 1	711605	523380	21	32	35
5271	Manzano Anderson No. 1	709968	522005	21	32	35
1120	Charles Read, Sinclair State #1			21	33	2
1628	Getty Oil Company Stock Unit #1	√739300	√538050	21	33	15
1629	Amoco Production Company State LT #1	√727500	√522200	21	33	32
5318	Bass Big Eddy Unit No. 90	605975	516526	22	29	4
5319	Hudson Federal No. 1	597850	515250	22	29	6
224	IMCC Water Test #3	√621693	√512772	22	29	12
225	IMCC Water Test #2	√621750	√513150	22	29	12
226	IMCC Water Test #1	√622044	√513466	22	29	12
5320	Bass Big Eddy Unit 96	604394	505900	22	29	16
5321	Bass Big Eddy Unit No. 88	593929	506028	22	29	18
1137	WIPP 32	608848	489850	22	29	33
1138	WIPP 29	612378	488559	22	29	34
5084	Yates Jasmine "AJI" Federal No. 1	654502	515157	22	30	1
5085	Phillips Livingston Ridge No. 2	652656	516740	22	30	1
5086	Troporo Cabana No. 1	652168	515145	22	30	1
5087	Phillips Livingston Ridge No. 4	652292	519352	22	30	1
5089	Phillips Livingston Ridge No. 3	652115	518300	22	30	1
5090	Phillips Livingston Ridge No. 6	653438	516467	22	30	1
5092	Phillips James "A" No. 12W	650327	515728	22	30	2
5093	Phillips James A No. 10	648433	515137	22	30	2
5094	Phillips James A No. 9	650945	519123	22	30	2
5095	Phillips James A No. 8	650793	518134	22	30	2
5096	Phillips James "A" No. 4	649478	517807	22	30	2
5097	Phillips James "A" No. 3	648081	516451	22	30	2
5098	Phillips James "A" No. 2	649489	516124	22	30	2
5099	Phillips James "A" No. 6	650807	516458	22	30	2
5100	Phillips James A No. 7	650818	514982	22	30	2
5101	Phillips James "A" No. 5	649679	515140	22	30	2
5102	Phillips James A No. 1	649472	515142	22	30	2
702	D-96	√645200	√519150	22	30	3
703	U-168	√645900	√515900	22	30	3
5091	Yates Donell 3 Federal No. 1	644112	517803	22	30	3
227	I-323	√639250	√515850	22	30	4
704	Gypsy #3 (GO-03)	√640400	√519625	22	30	4
707	U-167	√640675	√515825	22	30	4
737	NM Potash #1 / Lomasson 1 (I-A)	√628800	√516600	22	30	6
741	NM Potash #3A / Lommasson Test #3 (I-C)	√629275	√518000	22	30	6
742	NM Potash #2/Lommasson #2 (I-B)	√627200	√517900	22	30	6
755	Gypsy Oil #4 (GO-04)	√630850	√510050	22	30	8
228	U-97 635789 493447	~~643630~~	~~493461~~	22	30	9
764	U-163-S	√638050	√513325	22	30	9
766	U-97-A	√635775	√509650	22	30	9
767	I-322	√635900	√512150	22	30	9

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769	I-326	✓636225	✓514400	22	30	9
770	D-82	✓643625	512650	22	30	10
771	D-121	647500	✓510525	22	30	11
5111	Phillips James "E" No. 8	649916	511440	22	30	11
5112	Phillips James "E" No. 6	649501	511172	22	30	11
5113	Phillips James "E" Federal No. 5	651144	512689	22	30	11
5114	Phillips James "E" Federal No. 4	651151	513733	22	30	11
5115	Phillips James "E" No. 2	648211	513943	22	30	11
5122	Phillips James "E" No. 1	649498	512506	22	30	11
5322	Phillips James E Federal No. 9	651450	510150	22	30	11
5104	Phillips James E No. 15	652468	511180	22	30	12
5105	Phillips James "E" No. 14	653458	512523	22	30	12
5106	Phillips James "E" No. 13	652138	512516	22	30	12
5107	Phillips James "E" No. 12	653460	513839	22	30	12
5109	Phillips James "E" No. 11	652140	513832	22	30	12
5110	Bass James Ranch Unit No. 48	651813	510184	22	30	12
5323	Bass James Ranch Unit No. 70	654900	510000	22	30	12
773	D-120	✓653125	✓507725	22	30	13
1142	WIPP 33	653981	505790	22	30	13
5103	Mitchell Energy Apache "13" Federal No. 1	656517	507932	22	30	13
774	D-48	✓649500	✓504175	22	30	14
1143	WIPP 25	643343	505868	22	30	15
783	I-147	✓634100	✓499990	22	30	20
784	NM Potash & Chemical #1 (I-D) 631650	~~631350~~	✓503200	22	30	20
785	IMCC #145 (I-145)	✓634150	✓502700	22	30	20
786	IMCC # 143 (I-143)	✓631425	✓502700	22	30	20
787	I-114	✓631500	✓499950	22	30	20
788	D-33	✓640800	✓498850	22	30	21
789	I-111	✓638175	✓502650	22	30	21
790	I-112	✓636900	✓500050	22	30	21
791	D-263	✓645950	✓501475	22	30	22
792	D-264	✓643700	✓502000	22	30	22
794	D-259	✓650400	✓500700	22	30	23
795	D-261	✓647750	✓503625	22	30	23
796	D-262	✓646300	✓503875	22	30	23
797	D-202	✓647375	✓499950	22	30	23
798	D-260	✓650775	✓503000	22	30	23
799	D-255	✓650250	✓498800	22	30	23
800	D-258	✓648900	✓502500	22	30	23
802	D-104	✓655500	✓501500	22	30	24
1144	P-14	652159	499082	22	30	24
1145	P-12	656692	503896	22	30	24
5126	Mitchell Apache "24" Federal No. 1	656552	499922	22	30	24
806	D-235	✓652375	✓496450	22	30	25
5124	Mitchell Apache "25" Federal No. 1	656234	497001	22	30	25
5125	Mitchell Apache "25" Federal Com. No. 2	655598	494097	22	30	25
807	D-203	✓650350	✓496050	22	30	26
808	D-254	✓648400	✓498400	22	30	26
809	D-233	✓646300	✓498400	22	30	26
810	D-234	✓651000	✓493650	22	30	26
811	D-200	✓641000	✓494100	22	30	27
812	D-198	✓643625	✓493475	22	30	27
813	D-181	✓643750	✓496200	22	30	27
814	D-231	✓646100	✓495900	22	30	27
815	D-232	✓642350	✓494800	22	30	27
5324	Richardson & Bass Federal Legg No. 1	644179	498036	22	30	27

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816	D-224	639500	497375	22	30	28
817	D-219	639750	494650	22	30	28
818	D-216	637000	494600	22	30	28
819	D-185	641000	496100	22	30	28
820	D-167	638350	495850	22	30	28
821	D-225	637000	496800	22	30	28
822	D-278	635700	494600	22	30	28
1147	WIPP 26	635509	496516	22	30	29
850	D-199	638400	491000	22	30	33
851	D-218	639500	492150	22	30	33
852	D-196	638500	490400	22	30	33
853	D-221	639800	489500	22	30	33
854	D-195	638600	490750	22	30	33
855	D-194	639600	493300	22	30	33
856	D-217	637000	492100	22	30	33
857	D-170	638500	490800	22	30	33
858	D-38	638250	493300	22	30	33
859	D-168	640800	493250	22	30	33
860	D-169	635700	493300	22	30	33
861	D-228	638200	489975	22	30	33
862	D-226	637100	490750	22	30	33
863	D-180	643700	490500	22	30	34
864	D-188	641150	490900	22	30	34
865	D-230	642250	494700	22	30	34
866	D-36	646000	493150	22	30	34
867	USGS 3 (GS 3)	641350	488450	22	30	34
868	D-229	642400	492875	22	30	34
229	D-250	649300	490875	22	30	35
870	D-250-A	649247	490985	22	30	35
871	D-249	646675	490775	22	30	35
873	D-160-S	652750	490650	22	30	36
5116	Shell James Ranch No. 1	654924	488781	22	30	36
5117	Enron James Ranch Unit No. 71	656248	493126	22	30	36
5118	Enron James Rand Unit No. 37	656263	490090	22	30	36
5119	Enron James Ranch Unit No. 19	654945	490094	22	30	36
5120	Belco James Ranch No. 11	652484	491463	22	30	36
5121	Enron James Ranch Unit No. 18	655815	491378	22	30	36
5123	Bass James Ranch Unit No. 29	653880	490100	22	30	36
5325	Bass James Ranch Unit No. 41	653887	488787	22	30	36
5000	Hanagan No. 2 Unocal-HPC	687453	517817	22	31	1
5002	Phillips Molly State No. 2	685143	517807	22	31	1
5004	Phillips Molly State No. 4	683697	517798	22	31	1
5005	Pogo Federa 1 No. 1	685149	516803	22	31	1
5006	Pogo Federal 1 No. 3	687459	516799	22	31	1
5007	Pogo 1 Federal No. 4	683829	516803	22	31	1
5008	Pogo Federal 1 No. 5	684173	515489	22	31	1
5009	Pogo Federal 1 No. 6	685062	515399	22	31	1
5010	Pogo Federal 1 No. 6	686144	515490	22	31	1
5011	Yates Unocal "AHU" Federal No. 2	687775	519132	22	31	1
5012	Pogo Federal 1 No. 2	686469	516801	22	31	1
5088	Hanagan No. 1 Unocal-HPC	686461	518138	22	31	1
5326	Phillips Molly State No. 1	685129	519123	22	31	1
5327	Phillips Molly State No. 3	683812	519115	22	31	1
5328	Yates Unocal "AHU" Federal No. 1	686455	519124	22	31	1
5014	Pogo State "2" No. 3	682845	516790	22	31	2
5329	Yates Flora "AKF" State No. 1	680237	515105	22	31	2

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5330	Yates Graham "AKB" State No. 2	682839	517800	22	31	2
5331	Yates Graham "AKB" State No. 1	682828	519113	22	31	2
5332	Yates Flora "AKF" State No. 2	680200	516400	22	31	2
5333	Pogo State 2 No. 2	680850	515250	22	31	2
5334	Pogo State 2 No. 1	682863	514819	22	31	2
5335	Bryon McKnight & Troporo Campana No. 1	657463	517615	22	31	6
5336	Yates Llama "ALL" Federal No. 1	657789	509389	22	31	7
1149	DOE 2	667317	509876	22	31	8
1149	Fenix & Scissons Inc., WIPP No. DOE-2	667317	509876	22	31	8
1150	WIPP 11	667700	513751	22	31	9
1150	WIPP 11	667700	513751	22	31	9
1151	WIPP 34	669449	509375	22	31	9
1152	WIPP 14	665336	509260	22	31	9
1153	AEC 8	679951	513567	22	31	11
1153	AEC 8	679951	513567	22	31	11
5015	Yates Martha "AIK" Federal No. 1	682796	509554	22	31	11
5016	Yates Martha "AIK" Federal No. 2	682885	511198	22	31	11
5019	Yates Martha "AIK" Federal No. 5	682877	512529	22	31	11
5020	Yates Martha "AIK" Federal No. 6	682869	513845	22	31	11
5337	Yates Martha "AIK" Federal No. 3	681576	509860	22	31	11
5338	Yates Martha "AIK" Federal No. 4	681568	511172	22	31	11
5021	Pogo Federal 12 No. 2	683872	511208	22	31	12
5022	Pogo Federal 12 No. 4	683537	512529	22	31	12
5023	Pogo Federal 12 No. 5	683529	513841	22	31	12
5024	Pogo Federal 12 No. 6	684860	511537	22	31	12
5025	Pogo Federal 12 No. 7	684852	512857	22	31	12
5027	Pogo SCL Federal No. 2	686504	512529	22	31	12
5028	Pogo Federal 12 No. 3	685202	509565	22	31	12
5339	Pogo Federal 12 No. 8	684844	514173	22	31	12
5029	Texaco Federal Neff "13" No. 2	687857	507261	22	31	13
5030	Texaco Neff 13 No. 3	686552	504607	22	31	13
5032	Texaco Federal Neff 13 No. 6	683563	508250	22	31	13
5033	Texaco Federal Neff 13 No. 7	683570	506937	22	31	13
5034	Texaco Federal Neff 13 No. 8	683579	505578	22	31	13
5340	Texaco Federal Neff 13 No. 5	685216	507264	22	31	13
5341	Pogo Neff 13 No. 1	686544	505923	22	31	13
1154	P-20	683197	504767	22	31	14
5035	Yates Dolores "AIL" Federal No. 3	682803	507264	22	31	14
5036	Yates Dolores "AIL" Federal No. 2	682812	505893	22	31	14
5037	Yates Dolores "AIL" Federal No. 1	682796	508580	22	31	14
1155	Fenix & Scisson, WIPP HYDRO H-5c	677878	508198	22	31	15
1156	P-21	677862	508351	22	31	15
5342	Clayton W. Williams Badger Unit Federal No. 1	674707	505867	22	31	15
1158	Fenix & Scisson, WIPP #13	663885	506464	22	31	17
1159	WIPP 12	667371	504068	22	31	17
1160	P-5	667286	504120	22	31	17
1161	P-13	656973	509039	22	31	18
1162	Fenix and Scisson, Inc., WIPP H-6c	657232	508884	22	31	18
1163	P-3	664351	498747	22	31	20
1164	Fenix & Scisson, Inc., WIPP #18	667446	502935	22	31	20
1165	Fenix & Scisson, Inc., WIPP #22	667453	501165	22	31	20
1166	Fenix & Scisson, Inc., WIPP #21	667459	500071	22	31	20
1167	Fenix & Scisson, Inc., WIPP #19	667453	501632	22	31	20
1168	ERDA 9	667301	498887	22	31	20
1641	H-16	666231	499726	22	31	20
1643	H-18	662621	502926	22	31	20

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1169	P-11	678217	503781	22	31	23
1170	P-19	680377	500362	22	31	23
5038	Pogo Federal 23 No. 1	682604	499315	22	31	23
5039	Pogo Federal "23" No. 2	682601	500402	22	31	23
5040	Pogo Federal "23" No.3	682599	501631	22	31	23
5041	Pogo Federal 23 No. 5	682744	503275	22	31	23
5343	Texas Crude Wright Federal 23 No. 1	682933	498982	22	31	23
5042	Texaco Getty Federal 24 No. 4	685241	500628	22	31	24
5043	Texaco Getty Federal 24 No. 5 SWD	684906	502953	22	31	24
5044	Texaco Getty Federal 24 No. 2	683925	499308	22	31	24
5045	Getty Federal #24-1	686559	501978	22	31	24
5048	Texaco Getty Federal 24 No. 3	686227	503289	22	31	24
5046	Pogo Neff Federal No. 2	683605	497005	22	31	25
5047	Pogo Federal Neff No. 1	685247	497996	22	31	25
5344	Pogo Neff Federal No. 3	684027	498226	22	31	25
1172	P-18	682589	493556	22	31	26
1173	P-10	678410	496383	22	31	26
5049	Pogo Federal 26 No. 1	682760	498050	22	31	26
5050	Pogo Federal 26 No. 2	681299	496693	22	31	26
5051	Pogo Federal "26" No. 3	680158	498061	22	31	26
5052	Pogo Federal 26 No. 4	678359	498083	22	31	26
5053	Pogo Federal 26 No. 5	681039	498331	22	31	26
5054	Pogo Federal 26 No. 6	678367	496708	22	31	26
5055	Pogo Federal 26 No. 7	680015	496696	22	31	26
1174	P-4	671327	493521	22	31	28
1175	DOE-1	672206	493563	22	31	28
1176	P-2	672609	498536	22	31	28
1630	Department of Energy WIPP No. H-15	672606	498572	22	31	28
1177	H-1	666400	497991	22	31	29
1178	Department of Energy, H-14	662815	493697	22	31	29
1179	ERDA, Hydrological H-2c	663907	498002	22	31	29
1180	Sandia National Laboratories, Hydrological No. 3	667377	495440	22	31	29
1181	P-1	662804	493651	22	31	29
1182	P-6	657144	496090	22	31	30
1183	P-15	657148	488426	22	31	31
1184	H-11	672647	489617	22	31	33
1185	P-9	672678	489599	22	31	33
5056	Yates David Ross "AIT" Federal No. 1	682660	491396	22	31	35
5057	Union of CA Medano State Com. Well No. 1	685311	490031	22	31	36
5345	Siete Ottowa State No. 1	706377	516673	22	32	3
5346	Santa Fe Trumpeter 4 State No. 1	702432	515309	22	32	4
5347	Getty Bilbrey Federal Com. No. 1	701090	519263	22	32	4
5348	Getty Bilbrey Federal No. 1	697134	519223	22	32	5
5349	Yates Rosemary "AJB" Federal No. 1	689111	516479	22	32	6
5350	Pogo Federal 6 No. 1	688768	519007	22	32	6
5351	Amoco Federal "CK" Com. No. 1	693182	517875	22	32	6
5352	Strata Flamenco Federal No. 1	689152	510880	22	32	7
5353	Santa Fe White Swam "9" Federal No. 1	704165	509787	22	32	9
5354	Santa Fe White Swam "9" Federal No. 4	703788	512676	22	32	9
5355	Maralo Wild Turkey "9" state No. 1	703458	511356	22	32	9
5356	Maralo Wild Turkey "10" state No. 1	704823	511448	22	32	10
5357	WTI Barr None Federal No. 1	705090	512723	22	32	10
5358	Phillips Emerald Federal No. 1	705153	510128	22	32	10
5359	Maralo Prohibition Federal No. 2	711819	511456	22	32	11
5158	Maralo Prohibition Federal Unit No. 1	715576	512845	22	32	12
5159	Pogo WBR Federal No. 1	719299	507585	22	32	13

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5160	Ray Smith B&H Federal No. 1	719651	504941	22	32	13
5161	Maralo Prohibition Federal Unit No. 4	713055	507207	22	32	14
5162	Meridian Red Tank Federal No. 4	711890	505887	22	32	14
5163	Meridian Red Tank Federal No. 1	711774	504537	22	32	14
5164	Meridian Red Tank Federal No. 3	710784	504523	22	32	14
5165	Carper Red Tank Unit No. 2 (SWD?)	711772	504864	22	32	14
5166	Meridian Red Tank Federal No. 5 (SWD?)	712743	504551	22	32	14
5360	Maralo Prohibition Federal Unit No. 6	714045	507207	22	32	14
5361	Meridian Redchecker 14 No. 2	714051	505880	22	32	14
5362	Meridian Redchecker 14 No. 1	714060	504564	22	32	14
5363	Meridian Prohibition Federal No. 5	711910	507207	22	32	14
5364	Meridian Red Tank Federal No. 6	711735	505887	22	32	14
5167	Superior No. 1 Connally Federal	707811	506124	22	32	15
5168	Strata Paisano Federal No. 3	705128	508426	22	32	15
5169	Strata Paisano Federal No. 2	706130	507124	22	32	15
5170	Strata Paisano Federal No. 1	704937	507436	22	32	15
5171	Strata Lechuza Federal No. 5	704824	505759	22	32	15
5173	Strata Lechuza Federal No. 3	707493	504806	22	32	15
5174	Strata Lechuza Federal No. 2	706145	505775	22	32	15
5175	Strata Lechuza Federal No. 1	704962	504975	22	32	15
5365	Strata Lechuza Federal No. 4	706154	504786	22	32	15
5176	Yates Kiwi "AKX" State No. 3	704158	507100	22	32	16
5177	Yates Kiwi "AKX" State No. 2	704170	505751	22	32	16
5179	Yates Kiwi "AKX" State No. 4	702868	504415	22	32	16
5180	Yates Kiwi "AKX" State No. 5	702851	506059	22	32	16
5181	Yates Kiwi "AKX" State No. 6	701542	504730	22	32	16
5182	Yates Kiwi "AKX" State No. 7	702509	507416	22	32	16
5183	Yates Kiwi "AKX" State No. 8	701519	507402	22	32	16
5184	Yates Kiwi "AKX" State No. 9	704139	509067	22	32	16
5366	Yates Kiwi "AKX" State No. 1	704185	504435	22	32	16
5185	Yates Cleary "AKC" Feceral No. 1	697249	506004	22	32	17
5186	Yates Cleary "AKC" Federal No. 2	694250	508981	22	32	17
5188	Pogo Livingston Ridge Federal No. 1	692941	508635	22	32	18
5189	Pogo Livingston Ridge Federal No. 3 "ZAP"	688841	508765	22	32	18
5190	Pogo East Livingston Ridge Federal No. 3	691960	507160	22	32	18
5367	John H. Trigg Federal Jennings No. 1	693293	504667	22	32	18
5368	Ralph Lowe Bass Federal No. 1	693314	499351	22	32	19
5191	Zonne Federal No. 1	697274	502059	22	32	20
5192	Union of CA Federal Gilmore No. 1 (Cerc Fed 1 SWD)	703873	500772	22	32	21
5193	Strat Cercion Federal No. 3	702536	503708	22	32	21
5194	Strat Cercion Federal No. 1	703864	502131	22	32	21
5369	Strata Cercion Federal No. 5	704183	503788	22	32	21
5195	Trigg Federal Red Tank No. 1-22	705188	502158	22	32	22
5196	Strata Cercion Federal No. 4	706503	502505	22	32	22
5197	Strata Cercion Federal No. 2	705507	503807	22	32	22
5370	Pogo Prize Federal No. 13	709485	500842	22	32	22
5371	Pogo Prize Federal No. 10	709491	499529	22	32	22
5198	Meridian Checkerboard 23 Federal No. 6	710224	499756	22	32	23
5199	Pogo Red Tank 23 Federal No. 2	714066	501040	22	32	23
5200	Meridian Checkerboard 23 No. 16	714102	501921	22	32	23
5201	Meridian Checkerboard 23 Federal No. 13	714068	502597	22	32	23
5202	Meridian Checkerboard 23 Federal No. 12	714475	503927	22	32	23
5203	Meridian Checkerboard 23 Federal No. 8	713073	502259	22	32	23
5204	Meridian Checkerboard 23 Federal No. 4	711784	503533	22	32	23
5206	Meridian Checkerboard 23 Federal No. 5	710807	501189	22	32	23
5372	Meridian Checkerboard 23 Federal No. 11	713074	503575	22	32	23

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5373	Meridian Checkerboard 23 Federal No. 3	712107	501921	22	32	23
5374	Meridian Checkerboard 23 Federal No. 2	713409	499262	22	32	23
5375	Meridian Checkerboard 23 Federal No. 1	713126	500954	22	32	23
5376	Meridian Checkerboard 23 Federal No. 9	712130	499893	22	32	23
5377	Meridian Checkerboard 23 Federal No. 7	711795	500552	22	32	23
5378	Meridian Checkerboard 23 Federal No. 10	710800	502232	22	32	23
5208	Pogo Covington "A" Federal No. 2	715786	498671	22	32	25
5380	Pogo Covington "A" Federal No. 8	715772	493995	22	32	25
5381	Pogo Covington "A" Federal No. 9	717086	494153	22	32	25
5382	Pogo Covington "A" Federal No. 1	717041	498309	22	32	25
5209	Pogo Covington "A" Federal No. 18	713148	498645	22	32	26
5210	Pogo Red Tank "26" Federal No. 1	711731	495498	22	32	26
5211	Pogo Red Tank "26" Federal No. 2	710485	498569	22	32	26
5383	Pogo Red Tank "26" Federal No. 3	710172	496920	22	32	26
5384	Pogo Red Tank "26" Federal No. 4	710179	495917	22	32	26
5212	Pogo Federal 27 No. 1	706900	493891	22	32	27
5214	Pogo Exxon Federal 27 No. 3	709193	495630	22	32	27
5385	Pogo Prize Federal No. 4	709089	497007	22	32	27
5386	Pogo Prize Federal No. 5	709176	498222	22	32	27
5387	Pogo Exxon Federal 27-2	709212	494256	22	32	27
5216	Pogo Red Tank 28 Federal No. 3	702247	498452	22	32	28
5389	Pogo Red Tank "28" Federal No. 1	704225	498483	22	32	28
5217	Bass Perry Federal No. 1	692059	492737	22	32	31
5218	Pogo Proximity 31 No. 4	691954	492737	22	32	31
5219	Enron Silverton 31 Federal No. 1	689284	488859	22	32	31
5220	Yates Lotus "ALT" State No. 2	697351	491465	22	32	32
5221	Pogo Red Tank 34 Federal No. 3	709225	492852	22	32	34
5223	Pogo Red Tank 34 Federal No. 2	709223	491671	22	32	34
5390	Pogo Red Tank "34" Federal No. 14	706913	492866	22	32	34
5391	Pogo Red Tank "34" Federal No. 4	707918	491618	22	32	34
5392	Pogo Red Tank "34" Federal No. 1	708236	492940	22	32	34
5224	Pogo Red Tank 35 Federal No. 1	710208	492972	22	32	35
5393	Pogo Red Tank "35" Federal No. 3 SWD	710868	490662	22	32	35
5394	Shell Bootleg Ridge Unit No. 1	717094	493357	22	32	36
5395	Meridian Mule Deer 36 State No. 1	718414	493357	22	32	36
5396	Meridian Mule Deer 36 State No. 2	718084	491707	22	32	36
5397	Meridian Mule Deer 36 State No. 4	719534	493027	22	32	36
5242	Texas Pacific Reed Federal No. 1	731495	517159	22	33	4
1631	Dual Production Co. Richardson-Bass State No. 1	✓730500	✓515575	22	33	5
~~5243~~	~~Dual Richardson & Bass State No. 1~~	~~730365~~	~~515509~~	~~22~~	~~33~~	~~5~~
5244	Meridian Dagger Lake State No. 1	728715	515179	22	33	5
5241	Superior San Simone State Com No. 1	723435	518149	22	33	6
5239	Superior SST State 7 No. 1	723435	511549	22	33	7
5240	Cabot State "K" No. 1	720922	510222	22	33	7
5238	Meridian Dagger Lake "8" Federal No. 1	727370	514213	22	33	8
5398	Meridian Dagger Lake 8 Fed No. 2	728360	514543	22	33	8
5236	Dual Hudson Federal No. 1	731330	514213	22	33	9
1632	Getty Oil Company Getty Federal 15 No. 1	739420	506414	22	33	15
5399	Getty Federal 15 No. 1	739333	506351	22	33	15
5400	Getty Federal 15 Com "B" No. 1	738013	508991	22	33	15
5237	Pogo EBR Federal No. 1	726123	506282	22	33	17
5234	Pogo State NBR No. 2	722146	507594	22	33	18
5235	Pogo State NBR No. 1	723492	506273	22	33	18
5233	Santa Fe Bootleg Ridge 19 State No. 1	721313	503306	22	33	19
5401	Collins & Ware White Lightning Federal No. 1	724872	500986	22	33	19
1633	Davis and Collins Conoco Federal #1	726246	502380	22	33	20

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5232	Davis & Collins Conoco Federal No. 1	726170	502337	22	33	20
5231	Yates Pronghorn "ACZ" Federal No. 1	726246	495713	22	33	29
5229	Yates pronghorn Unit No. 2	724919	497052	22	33	30
5230	Mitchell Bighorn "30" State No. 2	722064	496705	22	33	30
1639	Helbing & Podpechan Shell State #1-B	726355	489162	22	33	32
5226	Helbing & Podpechan Shell State No. 1-B	726303	489144	22	33	32
5402	R.B. Farris Phillps State No. 1	735512	493164	22	33	33
5227	CP Miller Humble State No. 1	739511	489206	22	33	34
5228	Amoco Federal "BG" No. 1	743432	491880	22	33	35
1226	Mesa Petroleum Company, Nash Unit #3	621510	479547	23	29	12
1227	Mesa Petroleum, Nash Unit #5	624533	474546	23	29	13
1228	Mesa Petroleum Company, Nash Unit #4	624517	476547	23	29	13
1229	Mesa Petroleum Company, Nash Unit #1	624195	475560	23	29	13
5127	Belco (Bass?) Belco-James Ranch No. 10	656055	486279	23	30	1
5128	Belco Hudson Federal No. 1	653563	486310	23	30	1
5129	Belco James Ranch Unit No. 3	655287	484839	23	30	1
907	D-227	✓642275	✓486850	23	30	3
1230	Fenix & Scisson, Inc., WIPP H-7c	648766	475035	23	30	14
1231	Skelly Oil Company, Forty-Niner Rdige Unit #1	638975	474206	23	30	16
5130	Texaco Forty-Niner Ridge Unit No. 3	637575	475238	23	30	16
1232	Mesa Petroleum Company, Nash Unit #6	625185	475553	23	30	18
1234	Skelly Oil Company, Forty Niner Ridge Unit 2	639004	470246	23	30	21
5131	Phillips Sandy Unit No. 1	652320	470288	23	30	24
1236	ERDA 10	644058	461520	23	30	34
1237	Atomic Energy Commission, U.S.G.S. Test Hole #1	644000	458900	23	30	34
5154	Union of CA Barclay Federal No. 1	685369	483466	23	31	1
5155	Owens Union Federal No. 1	684036	484770	23	31	1
5153	Continental State AA-2 No. 1	682702	487402	23	31	2
1642	H-17	673837	484304	23	31	3
1239	P-17	667955	484185	23	31	4
1240	P-8	667664	48471	23	31	4
1241	Fenix & Scisson, WIPP No. H-4C	662991	487607	23	31	5
1242	P-7	662669	487090	23	31	5
1243	MP Grace Cabin Baby Federal No. 1	665559	486111	23	31	5
1244	P-16	663914	483737	23	31	5
5147	Belco James Ranch Unit 14	658934	482782	23	31	6
5149	Enron James Ranch Unit No. 17	658924	485883	23	31	6
5150	Bass James Ranch No. 13	657800	486514	23	31	6
5151	Continental James Ranch Unit No. 7	660269	485996	23	31	6
5152	Bass James Ranch Unit No. 30	659943	484664	23	31	6
5141	Santa Fe North Pure Gold "8" Federal No. 9	666705	478105	23	31	8
5142	Santa Fe North Pure Gold "8" Federal No. 6	665259	479417	23	31	8
5143	Santa Fe North Pure Gold "8" Federal No. 5	665254	478108	23	31	8
5144	Santa Fe North Pure Gold "8" Federal No. 3	666887	480967	23	31	8
5145	Santa Fe North Pure Gold "8" Federal No. 2	666707	479421	23	31	8
5146	Santa Fe North Pure Gold "8" Federal No. 1	666896	479418	23	31	8
5148	Belco James Ranch Unit No. 15	662386	478118	23	31	8
5134	Santa Fed North Pure Gold "9" No. 9	670866	477804	23	31	9
5135	Santa Fe North Pure Gold "9" Federal No. 7	669534	480782	23	31	9
5136	Santa Fe North Pure Gold "9" Federal No. 4	668207	480778	23	31	9
5137	Santa Fe North Pure Gold "9" Federal No. 5	668532	481620	23	31	9
5138	Santa Fe North Pure Gold "9" Federal No. 2	668221	478099	23	31	9
5139	Santa Fe North Pure Gold "9" Federal No. 1	669545	477786	23	31	9
5140	Santa Fe Pure Gold "4" Federal No. 1	669525	481862	23	31	9
5133	Max M. Wilson Bauerdorf-Federal No. 1	683072	478191	23	31	11
5132	Devon Todd 13 'O' Federal No. 15	686664	473054	23	31	13

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1246	Texas American Oil Corp., Todd Federal 14 No. 1	680178	474279	23	31	14
1247	H-12	678079	477535	23	31	15
1248	El Paso Natural Gas Company, Arco State #1-16	669610	474216	23	31	16
1249	Patoil Corporation, Muse Federal #1	672277	467625	23	31	21
1250	Texas American Oil Corporation, Todd Federal 23 #3	681682	468971	23	31	23
1251	Texas American Oil Corp., Todd 23 Federal No. 1	681843	467651	23	31	23
1252	Skelly Oil Company, Todd 25 Federal #1-Z	685481	465032	23	31	25
1253	Texas American Oil Corp., Todd Federal #2	681861	465011	23	31	26
1254	Texas American Oil Corp., Todd Federal 26 No. 1	681531	465011	23	31	26
1255	Texas American Oil Corporation, Todd Federal #4	681522	466331	23	31	26
1256	Patoil Corporation, Wright-Federal #1	673622	463667	23	31	27
1257	El Paso Natural Gas Company, Mobil-Federal #1	665712	463629	23	31	29
1258	J.A. Leonard, Continental State No. 1	663060	460967	23	31	32
1259	Patoil Corporation, Wright-Federal #2	668367	459687	23	31	33
1260	Charles P. Miller, Pauley Harrison State #1	684234	457144	23	31	36
5245	Yates Saffron Unit No. 1	713552	486079	23	32	2
5246	OB Kiel, Jr. Federal No. 1	709293	486352	23	32	3
5247	Strata Aracanga Federal No. 1	702426	483394	23	32	4
5248	Santa Fe Platinum 6 Federal No. 1	690620	483483	23	32	6
5249	JH Trigg Federal "WL" No. 5	693473	482355	23	32	7
5250	McBee Continental Federal No. 1	702718	478364	23	32	9
5251	Strata Aracanga Federal No. 2	703103	479385	23	32	9
1263	Hill & Meeker & Ambass. Oil Corp., Matthews 11 #1	713295	481143	23	32	11
5252	Exxon Central SW Oil Corp Federal No. 1	710648	481391	23	32	11
5253	Superior Triste Draw Gulf Federal No. 1	711983	478484	23	32	11
5254	Strata Urraca Federal No. 2	710666	478366	23	32	11
5255	Yates Amanda "AMN" Federal No. 1	711612	480841	23	32	11
5256	Superior Triste Draw Federal No. 1	713292	474527	23	32	14
1264	John H. Trigg, Federal Continental 1-15	708068	475817	23	32	15
1265	Skelly Oil Company, Federal Sand 18-1	693552	475663	23	32	18
1266	Kirklin Drilling Company, Federal Estill AF-1	697549	467782	23	32	20
1267	Fenix & Scisson, Inc., WIPP No. H-10c	697550	467513	23	32	20
1268	Curtis Hankamer, Gulf-Federal A-A #1	√702825	√471850	23	32	21
1269	H.L. Johnston, Sr., Conoco-Fields-Federal #1	720347	469019	23	32	24
1270	Continental Oil Company, Fields Federal No. 1	720027	468023	23	32	24
1271	Continental Oil Company, Fields No. 2	715716	462987	23	32	25
1272	H.L. Johnston, Sr., Wehrli-Federal #1	717674	466331	23	32	25
1273	John H. Trigg, Federal WL #3-26	√715100	√462200	23	32	26
1274	P.M. Drilling Company, Federal James No. 4	715050	463967	23	32	26
1275	P.M. Drilling Company, Federal Field #1	712097	462613	23	32	26
1276	John H. Trigg Company, No. 4-26 Federal WL	713741	462302	23	32	26
1277	Max Wilson, Continental Federal No. 1	701519	466491	23	32	28
1278	Curtis Hankamer, Hankamer No.1 Continental Federal	√689600	√457200	23	32	31
1279	Curtis Hankamer, Holder Federal #1	704201	459915	23	32	33
1280	The Pure Oil Company, Federal K No. 1	709812	458639	23	32	34
1281	PM Drilling Company, Federal James No. 3	713439	458673	23	32	35
1282	John H. Trigg, Federal WL 1-35	713096	460314	23	32	35
1283	P.M. Drilling Company, Federal-James No. 1	714738	461323	23	32	35
1284	P-M Drilling Company, Payne No. 2	712436	460967	23	32	35
1285	John H. Trigg, Federal WL No. 2-35	√714425	√460450	23	32	35
1286	P.M. Drilling Company, Payne Federal No. 4	710793	459958	23	32	35
1287	P-M Drilling Company, Federal-Payne No. 1	712445	459647	23	32	35
1288	P.M. Drilling Co., Federal James No. 2	713418	461308	23	32	35
1289	P.M. Drilling Company, Federal Payne No. 3	710472	458643	23	32	35
1290	Penroc Oil Corporation, Triste State #1	715726	461667	23	32	36
1291	The Pure Oil Company, Brinninstool Deep Unit #1	718764	458769	23	32	36

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1292	David Fasken, Gulf State #1	716068	460023	23	32	36
5257	Yates Jackal "ANJ" Federal No. 7	731282	486206	23	33	4
5258	Cabeen Continental Federal No. 1-P	735569	483904	23	33	4
5259	WA & ER Hudson Shell Federal No. 1	725384	483523	23	33	6
5260	Yates Pronghorn Unit No. 1	723696	486489	23	33	6
5261	Hudson Federal No. 1	721203	478534	23	33	7
5262	Yates Pronghorn AAP Federal No. 1	726068	478256	23	33	8
5263	Amoco State "IK" No. 1	738219	482615	23	33	10
1296	P-M Oil Company, Texaco State No. 1	726502	473317	23	33	17
1297	Helbing & Podpechan, #1 A Shell State	721296	473304	23	33	18
1298	Tenneco Oil Company, Skelly State #1	723819	477273	23	33	18
1299	Continental Oil Company, Marshall #3	722500	468000	23	33	19
1300	Continental Oil Company, I.J. Marshall 19-1	721347	468037	23	33	19
1301	Continental Oil Company, Marshall #4	721298	469357	23	33	19
1302	Continental Oil Company, Marshall #19-2	722584	469360	23	33	19
1303	American Quasar, Brinninstool #1	729177	470692	23	33	20
1304	Continental Oil Company, Levick Federal #1	730514	468064	23	33	20
1305	Kirklin Drilling Company, Lea State #1	725282	461456	23	33	31
1306	El Cinco Production Co., Ltd., Humble State 1-32	729247	461465	23	33	32
1307	George L. Buckles Company, State 1-35	742455	457603	23	33	35
1323	Chase Petroleum Company, Valley #1	599137	452623	24	29	5
1324	El Capitan Oil Company, Federal Reid No. 1	596182	451311	24	29	6
1325	Southern California Petrol. Corp., Federal Reid #1	596210	447966	24	29	7
1326	Southern California Petrol. Corp., Federal Reid #2	596203	448671	24	29	7
1327	Tennessee Production Comp., Valley Land Company #	593560	446643	24	29	7
1328	Tennessee Production Company, Valley Land #3	594880	447305	24	29	7
1329	Skelly Oil Company, Cedar Canyon #1	608299	446429	24	29	9
1330	Skelly Oil Company, Cedar Canyon 9D #1	607090	446318	24	29	9
1331	Skelly Oil Company, Cedar Canyon #10-1	611032	448814	24	29	10
1634	Exxon Company, USA Exxon Pouche Federal No. 1	618984	449047	24	29	11
1332	Penzoil United Incorporated, Mobil-Federal 27 #1	609826	430402	24	29	27
1333	Perry R. Bass, Poker Lake Unit #54	639064	451785	24	30	4
1334	Perry R. Bass, Poker Lake Unit #45	629692	445286	24	30	18
1335	Fenix & Scisson, Inc., WIPP H No. 8-C	650409	438581	24	30	23
1336	Hill & Meeker, Bass Federal #1-25	652561	430749	24	30	25
1337	Ford Chapman & Associates, Federal-Nettles No. 1	635146	430603	24	30	29
1338	Skelly Oil Company, Todd 2 State #1	680275	454467	24	31	2
1339	Max Wilson, Jennings Federal No. 1	677646	451788	24	31	3
1340	Jack L. McClellan, Jennings Federal No. 1	673684	455760	24	31	3
1341	Texaco, Incorporated, M.M. Stewart Federal #1	672364	455753	24	31	4
1342	Fenix & Scisson, Inc., WIPP No. H-9C	667929	453890	24	31	4
1343	Sundance Oil Company, Betty Federal #1	670056	454734	24	31	4
1344	El Paso Natural Gas Company, Sundance Federal #1	669729	454407	24	31	4
1345	American Quasar, Dunes Unit Federal #1	659117	454367	24	31	6
1346	Ambassador Oil Corporation, Federal Y #1	661902	446427	24	31	7
1347	Gulf Oil Corporation, Federal Littlefield CT #1	681595	450486	24	31	11
1348	Coquina Oil Corporation, El Paso Federal No. 1	685570	447853	24	31	12
1349	W.J. Weaver, Continental Federal #1	667174	445136	24	31	17
1350	Charles B. Read, Ritchie Federal #1	661926	441141	24	31	18
1351	Pauley Petroleum Incorporated, Jennings Federal #1	667202	439856	24	31	20
1352	David Fasken, Poker Lake #40	664587	435859	24	31	20
1353	Hill & Meeker, Carper Federal #1-21	672465	439896	24	31	21
1354	The Texas Company, T. Heflin-Federal #1	686963	435990	24	31	24
1355	Pan American Petroleum Corp., Poker Lake Unit #36	672515	430631	24	31	28
1356	Texaco, Incorporated, Cotton Draw Unit No. 67	679117	426784	24	31	35
1357	Union Oil Co. of California, Union Federal 1 #1	718807	452144	24	32	1

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1358	Cabeen Exploration Corp., Continental Federal #1-L	716134	453435	24	32	1
1359	Calco, Marathon State #1	712200	454600	24	32	2
1360	P.M. Drilling Company, Ohio State No. 1	714798	454727	24	32	2
1361	Curtis Hankamer, Bondurant Federal No. 1	692340	455854	24	32	6
1362	Gulf Oil Corporation, Federal Hanagan D #1	708240	448103	24	32	10
1363	Continental Oil Company, Wimberly #2	714841	450783	24	32	11
1364	Curtis Hankamer, Hanagan Federal No. 2	713540	446806	24	32	11
1365	Gulf Oil Corporation, Federal Hanagan D #3	714854	448130	24	32	11
1366	Gulf Oil Corporation, Federal Hanagan D #2	713534	448126	24	32	11
1367	Curtis Hankamer, Gulf Hanagan #1	714860	446810	24	32	11
1368	Continental Oil Company, Wimberly #1	713527	449453	24	32	11
1369	Continental Oil Company, Wimberly 12 #1	720134	450839	24	32	12
1370	Continental Oil Company, Wimberly 12 #2	720140	449519	24	32	12
1371	Curtis Hankamer, Hanagan Federal No. 3	716167	449475	24	32	12
1372	Westates Petroleum Corp. of Texas, Woolley #1	720177	441624	24	32	13
1373	Continental Oil Company, Wimberly A #1	718837	445548	24	32	13
1374	Tenneco Oil Company, #1 USA Jennings	712210	445483	24	32	14
1375	Tenneco Oil Co., USA Jennings N.M. 033503 No. 2	711145	441759	24	32	14
1376	Tenneco Oil Company, Jennings Federal No. 4	711903	442868	24	32	14
1377	Tenneco Oil Co., USA Jennings N.M. 033503 Well #3	713549	445486	24	32	14
1378	Gulf Oil Corporation, Federal Hanagan B #2	709545	441517	24	32	15
1379	Gulf Oil Corporation, Federal Hanagan B #3	709593	442837	24	32	15
1380	Tenneco Oil Company, Hicks-Federal #1	706955	441486	24	32	15
1381	Gulf Oil Corporation, Federal Hanagan B #1	708285	441502	24	32	15
1382	Charles B. Read, Bradley #1	708319	437538	24	32	22
1383	Charles B. Read, Bradley #2	709298	438873	24	32	22
1384	Tenneco Oil Company, U.S. Smelting U.S.A. #2	705653	438831	24	32	22
1385	Tenneco Oil Company, U.S. Smelting U.S.A. Well #3	709639	437553	24	32	22
1386	Tenneco Oil Company, U.S Smelting USA #4	708641	438536	24	32	22
1387	Tennessee Gas Transmission Co., US Smelting USA #	708297	440182	24	32	22
1388	Tenneco Oil Company, U.S. Smelting, USA No. 5	709978	436567	24	32	22
1389	Curtis Hankamer, Ernest Federal #1	710948	438878	24	32	23
1390	Charles B. Read, Bradley #3	714900	440200	24	32	23
1391	Ralph E. Williamson, Wright Federal No. 1	708338	434898	24	32	27
1392	Union Oil of California, Paduca Federal #1	692468	433403	24	32	30
1393	Texaco Incorporated, Cotton Draw Unit Well #72	704296	425611	24	32	33
1394	Texaco, Incorporated, Cotton Draw Unit #69	706962	426960	24	32	34
1395	Sid W. Richardson, Inc., Federal Delbasin #1	710915	425681	24	32	35
1396	Continental Oil Company, Bell Lake Unit #7	751703	456332	24	33	1
1635	Getty Oil Company HNG State 4-F #1	732920	454890	24	33	4
1397	Hondo Drilling Company, Gulf N.W. #2	721439	453491	24	33	6
1398	Hondo Drilling Company, Gulf State NW #1	721447	452171	24	33	6
1399	Tom L. Ingram, State O #2	721460	449531	24	33	7
1400	Tom L. Ingram, State O #1	721454	450851	24	33	7
1401	Tom L. Ingram, State P #1	722542	451190	24	33	7
1402	George W. Riley Incorporated, State #1-7	725371	446943	24	33	7
1403	David Fasken, Gulf State #7-2	723000	449250	24	33	7
1404	Sunray Mid-Continent Oil Co., N.M. State A.G. 1	726681	450892	24	33	8
1405	Byard Bennett, Holland #1	751783	444434	24	33	13
1406	Tenneco Oil Company, State Lowe #1	726735	441659	24	33	17
1407	Robert B. Holt, Holly-State #1	729340	445646	24	33	17
1408	Continental Oil Company, State BB 20 No. 1	728092	436379	24	33	20
1409	F.R. Jackson, State #1	737312	439079	24	33	22
1410	Tenneco Oil Company, Sunray State #1	738682	432477	24	33	27
1636	Getty Oil Company Getty 28 State No. 1	735022	432456	24	33	28
1411	Tidewater Oil Company, State AP #1	729458	431107	24	33	29

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1412	Kirklin Drilling Co., Inc., Continental State #1	721192	435351	24	33	30
1413	Albert Gackle Operator, Continental State #1	725503	427126	24	33	31
1414	Gulf Oil Corp. & Kirklin Drilling, #1 Lea St. GX	751903	429917	24	33	36
1425	J. Glen Bennett, Superior Federal #1-3	613857	423808	25	29	3
1426	J. Glen Bennett, Superior #1-8			25	29	8
1427	Neil H. Wills, Superior Federal #1	603281	414470	25	29	8
1428	Mobil Oil Corporation, Corral Draw Unit #1	616520	410501	25	29	14
1429	J. Glen Bennett, Superior Federal 15 No.1	609901	409148	25	29	15
1430	Mobil Oil Corporation, Corral Draw Unit #2	611251	404764	25	29	22
1431	J. Glen Bennett, No. 1-26 Superior Federal	619292	398583	25	29	26
1432	J. Glen Bennett, Superior Federal 1-27	609987	398529	25	29	27
1433	Bell Petroleum Company, Federal #1	600565	402550	25	29	29
1434	Bell Petroleum Company, Cities Service Federal #1	597974	398534	25	29	30
1637	Duncan Drilling Company Slater A #1	598062	394496	25	29	31
1436	Pat Oil Corporation, R & B Federal #1	637835	422714	25	30	4
1437	J.M.C. Ritchie & Chambers & Kennedy, #1 Hopp Fed.	636541	420038	25	30	4
1438	Fred Pool Drilling Company, Superior State #1	635232	417381	25	30	8
1439	Ralph Lowe, Poker Lake State #1			25	30	8
1441	Ralph Lowe, T&P State #1			25	30	8
1442	Ralph Lowe, Superior State #1			25	30	8
1443	Ralph Lowe, Poker Lake State #3			25	30	8
1444	Alamo Corporation, Poker Lake Unit #5X-1A			25	30	10
1445	Bass Enterprises, Poker Lake #44	644427	417425	25	30	10
1446	Ralph Lowe, #1-X R&B Federal A			25	30	17
1447	Alamo Corporation, Poker Lake Unit #11A-7			25	30	17
1448	J. Ray Stewart, Poker Lake #61	631187	411967	25	30	17
1449	Jubilee Energy Corporation, Poker Lake Unit 64	632170	413637	25	30	17
1450	J. Ray Stewart, 66 Poker Lake Unit	630863	410592	25	30	17
1451	Perry R. Bass, Jennings-Federal No. 1	628542	413268	25	30	18
1452	Ralph Lowe, R&B Federal #1			25	30	18
1453	Alamo Corporation, Poker Lake #12A-9	628559	409261	25	30	18
1454	Central States Oil Company, Poker Lake Unit No. 38			25	30	19
1455	J.R. Stewart, Poker-Lake Unit No. 65	629888	407945	25	30	19
1456	Perry R. Bass, Continental-Federal #2	631231	405274	25	30	20
1457	Perry R. Bass, Continental Federal #1	631208	407957	25	30	20
1458	Alamo Corporation, Poker Lake Unit #6-2A			25	30	21
1459	Bass Enterprises Prod. Co., Poker Lake Unit No. 56	652558	398842	25	30	25
1460	Texaco Incorporated, Cotton Draw Unit No. 65	681739	422822	25	31	2
1638	Pauley Petroleum Poker Lake #46	663235	424153	25	31	5
1461	Alamo Corporation, Poker Lake Unit 7-A-3	668517	402935	25	31	28
1462	J.A. Leonard, Continental State No. 1			25	31	32
1463	Gold Metals & Santana Pet. Corp., #1 Del Basin Fed	679211	393756	25	31	35
1464	Texaco, Incorporated, Cotton Draw Unit No. 49	708283	421374	25	32	3
1465	Texaco Incorporated, E.F. Ray NCT-2 No. 1	704684	414738	25	32	9
1466	Texaco Incorporated, Cotton Draw Unit No. 52	704669	416058	25	32	9
1467	Tennessee Gas & Oil Company, Ray U.S.A. #1	705628	419030	25	32	10
1468	Texaco Incorporated, Cotton Draw Unit No. 39	705642	417710	25	32	10
1469	Texaco Incorporated, Cotton Draw Unit No. 40	706948	419047	25	32	10
1470	Texaco Incorporated, Cotton Draw Unit #66	705743	417612	25	32	10
1472	Texaco Incorporated, Cotton Draw Unit No. 60	707982	417575	25	32	10
1473	Texaco Incorporated, E.F. Ray Federal B No. 2	706962	417727	25	32	10
1474	Texaco Incorporated, E.F. Ray-Federal B Well #1	708336	415103	25	32	10
1475	Texaco Incorporated, E.F. Ray Federal No. 1	706990	415090	25	32	10
1476	Texaco Incorporated, E.F. Ray-Federal (NCT-1) No.2	706976	416410	25	32	10
1477	Tenneco Oil Company, Emily Flint Ray U.S.A. #41	705659	416068	25	32	10
1478	Westates Petroleum Corp. of Texas, Cont. Fed. #1	713646	415142	25	32	11

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1479	Patoil Company, Union Federal #1	717652	409904	25	32	13
1480	Joseph O'Neill Jr., Federal O #1	715012	409876	25	32	14
1481	Joseph O'Neill, Federal O #2	715000	411196	25	32	14
1482	Hill & Meeker, Ora Hall-Federal 14 #1	710655	412153	25	32	14
1483	Tennessee Gas Transmission, #1 USA G.E. Jordan	705679	409808	25	32	15
1484	Texaco Inc., G.E. Jordan Federal (NCT-2) Well No.1	705678	412438	25	32	15
1485	Texaco Incorporated, G.E. Jordan Federal (NCT-1)#2	706998	411149	25	32	15
1486	Tennessee Gas & Oil Company, G.E. Jordan #3	706997	413770	25	32	15
1487	Texaco Inc., G.E. Jordan Federal (NCT-1) No. 8	708343	413783	25	32	15
1488	Texaco Inc., G.E. Jordan-Federal (NCT-2) No. 2	705677	413578	25	32	15
1489	Tennessee Gas & Oil Company, G.E. Jordan USA #4	705678	411129	25	32	15
1490	Texaco Inc., G.E Jordan Federal (NCT-1) #6	708344	412463	25	32	15
1491	Tennessee Gas Transmission Co., G.E. Jordan USA #	706998	412450	25	32	15
1492	Texaco Incorporated, Cotton Draw Unit No. 46	708196	411318	25	32	15
1493	Tennessee Gas & Oil Company, State Monsanto #4	701685	409765	25	32	16
1494	Tennessee Gas Trans. Co., State E.L. Bradley #1	704358	412424	25	32	16
1495	Tenneco Oil Company, State Monsanto #6	702010	410759	25	32	16
1496	Tennessee Gas Transmission Co., State Monsanto #1	704358	411112	25	32	16
1497	Tenneco Oil Company, State Monsanto #5	703368	410772	25	32	16
1498	Tenneco Oil Company, Monsanto State #8			25	32	16
1499	Tennessee Gas & Oil Company, State Bradley #2	704357	413744	25	32	16
1500	Tenneco Oil Company, State Monsanto #7	700697	409426	25	32	16
1501	Tenneco Oil Company, State E.L. Bradley #3	702003	412066	25	32	16
1502	Continental Oil Company, State Z 16 #1	703038	412408	25	32	16
1503	Tennessee Gas & Oil Company, State Monsanto #3	703039	409779	25	32	16
1504	Tennessee Gas & Oil Company, Monsanto #2	704348	409814	25	32	16
1505	Shoreline Exploration Comp., Continental State #1	703368	412312	25	32	16
1506	Texaco Incorporated, Cotton Draw Unit #64			25	32	18
1507	The Texas Company, Jack B. Shaw Federal #1	692388	413613	25	32	18
1508	Texaco Inc.(formerly PRBass), Cotton Draw Unit #42	699438	405451	25	32	20
1509	Texaco Incorporated, Cotton Draw Unit #57	704083	404836	25	32	21
1510	Panther City Investment Co., Perry Federal #37	700444	404471	25	32	21
1511	Panther City Investment Co., Perry Federal #35	700423	405791	25	32	21
1512	Panther City Investment, Inc., Perry Federal No.6	701721	407126	25	32	21
1513	Panther City Invest. Inc., Perry Federal No. 7	701700	408445	25	32	21
1514	Panther City Investment Co., Perry Federal #27	704066	406156	25	32	21
1515	Panther City Investment Co., Perry Federal #28	703080	405817	25	32	21
1516	Tennessee Gas & Oil Company, #3 E.H. Perry-U.S.A.	703064	407139	25	32	21
1517	Panther City Investment Co., Perry Federal #38	701764	404484	25	32	21
1518	Perry R. Bass, Perry Federal #43			25	32	21
1519	Texaco Inc.(formerly Panther), Cotton Draw Unit 44	702763	404824	25	32	21
1520	Tenneco Oil Company, E.H. Perry USA Well No. 36	700401	407113	25	32	21
1521	Tennessee Gas & Oil Company, E.H. Perry U.S.A. 2	700380	408433	25	32	21
1522	Panther City Investment Company, Perry Federal #2	704384	407152	25	32	21
1523	Tennessee Gas Transmission Co., E.H. Perry USA #1	703047	408459	25	32	21
1524	Panther City Investment Company, Perry Federal #1	704367	408472	25	32	21
1525	Panther City Investment Company, Perry Federal #5	701743	405804	25	32	21
1526	Texaco Incorporated, G.E. Jordan Federal #3	705704	407168	25	32	22
1527	Texaco Incorporated, G.E. Jordan Federal No. 1	705687	408488	25	32	22
1528	Texaco Incorporated, Cotton Draw Unit No. 48	705386	406169	25	32	22
1529	Texaco Incorporated, G.E. Jordan Federal NCT-1 #5	706855	408657	25	32	22
1530	Texaco, C.D. Unit No. 18	706689	407514	25	32	22
1531	Joseph L. O'Neill, Federal P #1	713707	408557	25	32	23
1532	Texaco Incorporated, G.E. Jordan Federal No. 4			25	32	25
1533	Texaco Incorporated, Cotton Draw Unit No. 61	705420	403530	25	32	27
1534	Texaco Incorporated, Cotton Draw Unit No. 47	701778	403164	25	32	28

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1535	Texaco Incorporated, Cotton Draw Unit No. 56	704104	403187	25	32	28
1536	Tenneco Oil Company, J.D. Sena U.S.A. No. 1	701459	400840	25	32	28
1537	Texaco Incorporated, Cotton Draw Unit No. 51	702784	403174	25	32	28
1538	Texaco Incorporated, Cotton Draw Unit No. 54			25	32	28
1539	Texaco Incorporated, Cotton Draw Unit No. 45	700458	403151	25	32	28
1540	Texaco Incorporated, Cotton Draw Unit No. 59	704118	402197	25	32	28
1541	Texaco Incorporated, Cotton Draw Unit No. 50	701784	401844	25	32	28
1542	Tenneco Oil Company, J.D. Sena Jr. U.S.A. No. 2	700812	400834	25	32	28
1543	Texaco Incorporated, Cotton Draw Unit No. 58	699474	401821	25	32	29
1544	I.W. Lovelady, Conoco Federal #1-29	699485	399504	25	32	29
1545	Ray Smith, Ray Smith #1	689811	396460	25	32	31
1546	R.C. Graham, Conoco State No. 1	696462	396522	25	32	32
1547	Westates Petroleum Corp. of Texas, Jennings #1	704597	395266	25	32	33
1548	Hill & Meeker, Hall-Federal 1-33	700489	393906	25	32	33
1549	Hill & Meeker, Jennings-Federal 1-33	702134	396227	25	32	33
1550	Perry R. Bass, Federal-Muse #1	747971	424626	25	33	1
1551	Hill & Meeker, Bass Federal #1	730822	424518	25	33	5
1552	Santana Petroleum Corp., Annie Bass Federal #1	730872	416608	25	33	8
1553	Curtis Hankamer, Muse Federal #1	742717	419315	25	33	11
1554	Sam H. Jolliffe Jr., #1 Bass Federal	721629	413912	25	33	18
1555	Curtis Hankamer, Federal Bass #1	729628	408670	25	33	20
1556	George L. Buckles Co., Federal Marshall No. 1	736192	408690	25	33	21
1557	American Quasar Petroleum Company, Vaca Draw #1	736222	404740	25	33	21
1558	Hill & Meeker, Muse-Federal 23 #1	742865	404780	25	33	23
1559	R.B. Farris, Perry Federal 1	748141	404811	25	33	24
1560	King Resources, Pan American Federal No. 1	748160	400844	25	33	25
1561	Ashmun & Hilliard, Federal No. 1-25	752135	399551	25	33	25
1562	Robert A. Dean, Harry Dickson #1	741567	399489	25	33	27
1563	Tidewater Oil Company, Annie R. Bass Federal #1	736273	399459	25	33	28
1564	Curtis Hankamer, Conley Federal #1	736234	403420	25	33	28
1565	Tenneco Oil Company, W.H. Jennings Inc USA No. 1	727014	402046	25	33	29
1566	Tenn. Gas Transmission Co, Richardson & Bass USA#	721803	394131	25	33	31
1567	Pure Oil Company, Red Hills Unit #1	729402	393832	25	33	32
1568	Neil H. Wills, Continental State No. 1	731044	395490	25	33	32
1569	Max M. Wilson, Marathon-State #1	748205	394253	25	33	36
1570	Ashmun Hilliard Oil Company, State #1-36	748173	398204	25	33	36

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deleted entries w/green line 4/7/02 DWP

ID Number	Drillhole name	StateX (NAD27)	StateY (NAD27)	Township	Range	Section
~~1070~~	~~Amoco Prod., Federal Gas Com No. 1-G~~	~~610700~~	~~566400~~	~~20~~	~~30~~	~~21~~
~~1071~~	~~Texas International Petrol. Corp., Lowe Federal #1~~			~~20~~	~~30~~	~~31~~
1072	Pan American Petroleum Corp., Big Eddy Unit #11	632900	576850	20	31	7
230	U-30	650525	571950	20	31	14
~~1073~~	~~Pennzoil United, Big Eddy Unit No. 12~~			~~20~~	~~31~~	~~21~~
1074	Shell Oil Company, Perry Federal #1			20	32	10
1075	Flag-Redfern Oil Company, Hanson State #1			20	32	13
~~1076~~	~~Phillips Petroleum Company, Plata Deep Unit #1~~			~~20~~	~~32~~	~~15~~
215	NF-23-F	678525	560375	20	32	27
398	K-113	685500	554250	20	32	35
400	K-112	682800	554300	20	32	35
1077	Pan American Petroleum Corp., Little Eddy Unit #1			20	33	5
1078	Carl Engwall, Sinclair Federal #1			20	33	14
1079	Randall F. Montgomery, Bass State #1			20	33	18
1080	Randall F. Montgomery, Bass State #2			20	33	18
1081	Amoco Prod. Co., API #30-025-26241, Fed Y Com #1			20	33	27
1090	Pan American Petroleum Corp., Big Eddy Unit #18			21	29	3
1091	Union Oil Co. of California, Cowden Federal #1			21	29	4
1092	Meadco Properties, Ltd., Harris-Bell #1			21	29	5
1093	Meadco Properties Ltd., Harris Bell #2			21	29	5
1094	Meadco Properties Ltd., Harris 6 #1			21	29	6
1095	Perry R. Bass, Big Eddy Unit #61	610776	537608	21	29	15
1096	Pan American Petroleum Corp., Big Eddy Unit #16	596276	537559	21	29	18
1097	Perry R. Bass, Big Eddy Unit No. 40	612098	533654	21	29	22
1098	Bass Enterprises Prod. Co., Big Eddy Unit No. 38	610799	524446	21	29	34
452	Wills-10-A (W-10A)	655875	547400	21	30	1
453	Wills 10	655885	547400	21	30	1
454	D-131	652775	551050	21	30	1
455	U-126	648625	546500	21	30	2
456	U-144	648650	553125	21	30	2
457	US Potash (U-0)	646400	549000	21	30	2
458	D-157	642425	547000	21	30	3
459	U-91	642000	549750	21	30	3
460	Wills #13 (W-13)	643750	547300	21	30	3
461	Wills-9 (W-09)	645125	550125	21	30	3
462	Wills 14 (W-14)	644750	552800	21	30	3
500	D-158	642800	542800	21	30	10
501	Wills 12 (W-12)	644675	544100	21	30	10
502	US Potash #1 Aray McNutt J (U-S)	641025	543350	21	30	10
503	FC-62	645450	541725	21	30	10
504	D-112	641675	545150	21	30	10
216	D-159	646200	545050	21	30	11
505	Wills 11	649500	543600	21	30	11
507	D-152	647575	542300	21	30	11
508	D-156	647425	545075	21	30	11
510	U-63	651850	538000	21	30	13
523	K-159	630125	536775	21	30	13
217	U-75	641735	536100	21	30	15
232	U-75-A	641725	536100	21	30	15
5301	WC Blanks Big Eddy Unit No. 67	641866	537582	21	30	15

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5059	Bass Big Eddy Unit No. 44	640217	538905	21	30	16
5060	Bass Big Eddy No. 45-Y	640127	538904	21	30	16
1099	WIPP 27	637103	535612	21	30	21
218	MPE-186	651250	535350	21	30	23
550	FC-80	656400	535225	21	30	24
551	Crosby #1 (RC-01)	652500	526250	21	30	25
219	MPE-185	649025	525500	21	30	26
552	Crosby #2 (RC-02)	647650	529450	21	30	26
5061	Phillips James "D" No. 1	648187	525723	21	30	26
220	MPE-179	643800	529750	21	30	27
221	MPE-179-A	643806	529750	21	30	27
5062	Yates Kaleidoscope "AIO" Federal No. 1	640263	523060	21	30	33
583	I-123	643650	523800	21	30	34
5063	Yates Julia "AJL" Federal No. 4	644237	523079	21	30	34
5302	Yates Cabin Lake 34 Federal No. 1	645242	520102	21	30	34
5064	Phillips Peak View No. 1	651176	520437	21	30	35
5065	Phillips James "C" No. 1	646880	521743	21	30	35
5066	C. Grace Livingston Ridge No. 1-Y	652480	521752	21	30	36
5303	C Grace Salomeh No. 1	651831	520109	21	30	36
584	K-109	687800	553725	21	31	1
585	K-138	688275	548850	21	31	1
586	K-137	688300	550500	21	31	1
588	K-133	684350	552850	21	31	1
589	NF-51-F	680450	548850	21	31	2
590	FC-58	678475	550550	21	31	2
591	K-107	679875	553450	21	31	2
593	K-111	682850	550200	21	31	2
594	K-102	676475	550275	21	31	3
595	NF-50-F	675150	548675	21	31	3
596	K-100	675300	546150	21	31	3
597	K-101	677750	548800	21	31	3
598	FC-57	675150	551550	21	31	3
599	FC-55	672525	550150	21	31	3
600	K-99	673525	548200	21	31	3
601	K-103	677500	552600	21	31	3
602	FC-64	✓670000	✓546855	21	31	4
603	FC-54	669900	546200	21	31	4
604	FC-83	671800	547675	21	31	4
605	FC-85	668500	547475	21	31	4
606	NF-49-F	669825	548700	21	31	4
607	FC-64-A	✓670000	✓546875	21	31	4
608	NF-53-F	669750	551525	21	31	4
609	FC-74	669950	547200	21	31	4
610	NF-22-F	662300	547025	21	31	5
611	FC-87	666450	548150	21	31	5
612	NF-21-F	666850	550050	21	31	5
613	NF-41-F	667000	554000	21	31	5
614	NF-19-F	662050	546200	21	31	5
615	FC-60	664525	551475	21	31	5
616	FC-56	664550	548100	21	31	5
617	NF-8-F	667150	546275	21	31	5
618	NF-03-F	664425	554000	21	31	5
619	FC-90	665600	547250	21	31	5
620	NF-24-F	662900	550125	21	31	5
623	NF-48-F	660400	550125	21	31	6
624	NF-37-F	661850	543400	21	31	7

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625	NF-39-F	659300	543400	21	31	7
626	K-117	660675	542125	21	31	7
627	K-115	660675	544700	21	31	7
307	K-118	663300	542350	21	31	8
311	K-119	665925	542200	21	31	8
628	FC-88	665800	544775	21	31	8
629	NF-30-F	664650	543425	21	31	8
630	FC-89	664600	545875	21	31	8
631	K-116	663300	544650	21	31	8
632	NF-35-F	662250	541075	21	31	8
633	FC-61	669900	541000	21	31	9
634	FC-86	668925	545150	21	31	9
635	K-95	671525	542150	21	31	9
636	FC-84	671250	545625	21	31	9
637	NF-32-F	667600	544125	21	31	9
638	NF-31-F	670500	544125	21	31	9
640	NF-44-F	675200	543550	21	31	10
641	NF-42-F	672850	545825	21	31	10
642	K-94	672525	543975	21	31	10
643	NF-38-F	675125	541150	21	31	10
645	FC-59	678100	545850	21	31	11
646	K-139	683725	545450	21	31	12
649	NMP-153 (K-153)	688300	535800	21	31	13
650	FC-72	680575	538275	21	31	14
651	FC-71	677925	540700	21	31	14
652	FC-67	677950	535700	21	31	14
653	FC-73	682950	535775	21	31	14
656	NF-36-F	675050	538150	21	31	15
657	NF-33-A	673175	540825	21	31	15
660	NF-46-F	669800	538175	21	31	16
661	FC-75	667450	535700	21	31	16
662	KP-96	671525	539600	21	31	16
663	KP-97	672075	537000	21	31	16
664	NF-45-F	667200	540550	21	31	17
665	FC-77	664700	538150	21	31	17
666	NMP-161	659900	538000	21	31	18
667	NMP-160 (K-160)	658100	539000	21	31	18
668	FC-79	659650	532625	21	31	19
669	NMP-165	664725	530300	21	31	20
670	FC-78	664825	532700	21	31	20
671	NMP-166	662100	530300	21	31	20
592	NMP-163	669925	530325	21	31	21
673	K-98	670300	535350	21	31	21
674	FC-76	669950	532875	21	31	21
676	NMP-164	667400	530350	21	31	21
677	NFU-40-F	673275	535300	21	31	22
678	NF-43-F	675325	532775	21	31	22
682	NMP-156 (K-156)	682900	530650	21	31	23
683	NMP-155 (K-155)	688325	531700	21	31	24
684	KP-93	683350	532975	21	31	24
685	NMP-154 (K-154)	685850	533900	21	31	24
5079	Yates "AJA" Federal No. 7	688026	531008	21	31	24
5080	Yates Bonneville "AKK" Federal No. 2	688186	530998	21	31	24
5081	Yates Wolf "AJA" Federal No. 5	688045	528376	21	31	25
5082	Yates Wolf "AJA" Federal No. 4	688059	527034	21	31	25
5304	Maralo MR "25" Federal No. 1	687611	525719	21	31	25

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686	NMP-157 (K-157)	679875	525550	21	31	26
5305	Pogo Federal No. 1	679839	528315	21	31	26
688	NMP-167	675250	527650	21	31	27
689	FC-66	672700	530000	21	31	27
690	NMP-168	669975	527575	21	31	28
691	USP-135	668025	525425	21	31	28
692	NMP-170	667325	527650	21	31	29
693	NMP-169	664700	527650	21	31	29
694	Wills-8 (W-8)	657000	527650	21	31	30
695	Wills-7	657300	524700	21	31	31
696	FC-63	664650	524700	21	31	32
697	FC-68	667300	519900	21	31	32
1103	WIPP 30	667536	524337	21	31	33
698	FC-65	672750	519800	21	31	34
699	NF-52-F	675675	524800	21	31	34
700	FC-69	672775	524825	21	31	34
222	MPE-183	678100	519975	21	31	35
1104	ERDA 6	682279	521970	21	31	35
1104	ERDA 6	682279	521970	21	31	35
5306	Union Federal FI No. 1	678521	524326	21	31	35
5068	Yates Mary "AIV" State No. 5	688075	524406	21	31	36
5069	Yates Mary "AIV" State No. 3	686429	524399	21	31	36
5070	Yates Mary "AIV" State No. 1	686437	523087	21	31	36
5071	Yates Lost Tank "AIS" State No. 8	687770	520448	21	31	36
5072	Yates Lost Tank "AIS" State No. 6	686445	521756	21	31	36
5073	Yates Lost Tank "AIS" State No. 5	683807	520428	21	31	36
5075	Yates Lost Tank "AIS" State No. 3	685127	520435	21	31	36
5076	Yates Lost Tank "AIS" State No. 2	686453	520440	21	31	36
5307	Yates Lost Tank "AIS" State No. 1	687762	521764	21	31	36
5308	Yates Lost Tank "AIS" State No. 4	685122	521752	21	31	36
1105	Phillips Petroleum Company, ETZ Federal #1	718125	551150	21	32	1
1106	Kimball Production Company, Federal #1	716850	547150	21	32	1
1107	Phillips Petroleum Company, Hat Mesa A #1	712900	547100	21	32	2
1108	Amini Oil Company, Pubco Federal #1	710175	551000	21	32	2
1109	Amini Oil Company, New Mexico Federal #1	700625	552500	21	32	4
223	K-140	691100	550650	21	32	6
1110	Holly Energy, Inc., Salt Lake Deep No. 1	693200	552000	21	32	6
1111	The Superior Oil Company, Government H Com. #1	707700	544500	21	32	10
1112	Gackle Drilling Company, Federal #1	714300	541900	21	32	11
1113	Phillips Petroleum Company, Hat Mesa 2-#2	711600	541900	21	32	11
1114	Phillips Petroleum Company, Hat Mesa #1	712900	544500	21	32	11
5264	Belco Federal HM No. 1	715700	543100	21	32	12
5309	Belco Federal "HM" No. 13-1	716900	540250	21	32	13
5310	Collins & Ware N.L. Federal No. 2	691747	536332	21	32	18
5311	Getty North Bilbrey 18 Federal No. 1	691724	538989	21	32	18
5312	Skelly Salt Lake South Unit No. 1	699664	535095	21	32	21
5313	Santa Fe Bilbrey "21" Federal Com. No. 1	702335	531157	21	32	21
5314	Santa Fe Bilbrey "22" Federal Com. No. 1	707257	531208	21	32	22
1116	Gulf Oil Corporation, San Simon #1	714250	528750	21	32	26
5315	Collins & Ware Lincoln Federal No. 1	710253	527301	21	32	26
5279	Santa Fe Bilbrey Federal No. 1-A	706307	528583	21	32	27
5316	Santa Fe Bilbrey 27 Federal Com. No. 1	705323	527224	21	32	27
5278	Santa Fe Bilbrey Federal No. 1	703668	528559	21	32	28
5280	Santa Fe Bilbrey Federal No. 1-A	701038	527167	21	32	28
5277	Getty Bilbrey Federal Com No. 1	695745	527104	21	32	29
~~1117~~	~~Gulf Oil Corporation, H.T. Mattern (NCT) #10~~			~~21~~	~~32~~	~~31~~

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5272	Phillips Luke Federal No. 2	689062	524415	21	32	31
5273	Pogo Federal No. 1	693156	522136	21	32	31
5274	Collins & Ware BW Federal No. 1	688762	520119	21	32	31
5275	Phillips Luke Federal No. 1	689070	523103	21	32	31
5276	AEC No. 7	691829	523133	21	32	31
5265	Getty State Com No. 1	697111	523186	21	32	32
5317	Texaco Bilbrey 32 State Com. No. 1	695776	523170	21	32	32
5266	Texaco Bilbrey Federal Com No. 1	701049	524549	21	32	33
5267	Texaco Bilbrey Federal No. 2	701403	521883	21	32	33
5268	Phillips Bilbrey Federal No. 1	706351	520629	21	32	34
5269	Maralo Bilbrey Federal No. 1	706324	524620	21	32	34
5270	Gulf Chaney Federal No. 1	711605	523380	21	32	35
5271	Manzano Anderson No. 1	709968	522005	21	32	35
~~1120~~	~~Charles Read, Sinclair State #1~~			21	33	2
1628	Getty Oil Company Stock Unit #1	739300	538050	21	33	15
1629	Amoco Production Company State LT #1	727500	522200	21	33	32
5318	Bass Big Eddy Unit No. 90	605975	516526	22	29	4
5319	Hudson Federal No. 1	597850	515250	22	29	6
224	IMCC Water Test #3	621693	512772	22	29	12
225	IMCC Water Test #2	621750	513150	22	29	12
226	IMCC Water Test #1	622044	513466	22	29	12
5320	Bass Big Eddy Unit 96	604394	505900	22	29	16
5321	Bass Big Eddy Unit No. 88	593929	506028	22	29	18
1137	WIPP 32	608848	489850	22	29	33
1138	WIPP 29	612378	488559	22	29	34
5084	Yates Jasmine "AJI" Federal No. 1	654502	515157	22	30	1
5085	Phillips Livingston Ridge No. 2	652656	516740	22	30	1
5086	Troporo Cabana No. 1	652168	515145	22	30	1
5087	Phillips Livingston Ridge No. 4	652292	519352	22	30	1
5089	Phillips Livingston Ridge No. 3	652115	518300	22	30	1
5090	Phillips Livingston Ridge No. 6	653438	516467	22	30	1
5092	Phillips James "A" No. 12W	650327	515728	22	30	2
5093	Phillips James A No. 10	648433	515137	22	30	2
5094	Phillips James A No. 9	650945	519123	22	30	2
5095	Phillips James A No. 8	650793	518134	22	30	2
5096	Phillips James "A" No. 4	649478	517807	22	30	2
5097	Phillips James "A" No. 3	648081	516451	22	30	2
5098	Phillips James "A" No. 2	649489	516124	22	30	2
5099	Phillips James "A" No. 6	650807	516458	22	30	2
5100	Phillips James A No. 7	650818	514982	22	30	2
5101	Phillips James "A" No. 5	649679	515140	22	30	2
5102	Phillips James A No. 1	649472	515142	22	30	2
702	D-96	645200	519150	22	30	3
703	U-168	645900	515900	22	30	3
5091	Yates Donell 3 Federal No. 1	644112	517803	22	30	3
227	I-323	639250	515850	22	30	4
704	Gypsy #3 (GO-03)	640400	519625	22	30	4
707	U-167	640675	515825	22	30	4
737	NM Potash #1 / Lomasson 1 (I-A)	628800	516600	22	30	6
741	NM Potash #3A / Lommasson Test #3 (I-C)	629275	518000	22	30	6
742	NM Potash #2/Lommasson #2 (I-B)	627200	517900	22	30	6
755	Gypsy Oil #4 (GO-04)	630850	510050	22	30	8
228	U-97	635789	493447	22	30	9
764	U-163-S	638050	513325	22	30	9
766	U-97-A	635775	509650	22	30	9
767	I-322	635900	512150	22	30	9

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769	I-326	636225	514400	22	30	9
770	D-82	643625	512650	22	30	10
771	D-121	647500	510525	22	30	11
5111	Phillips James "E" No. 8	649916	511440	22	30	11
5112	Phillips James "E" No. 6	649501	511172	22	30	11
5113	Phillips James "E" Federal No. 5	651144	512689	22	30	11
5114	Phillips James "E" Federal No. 4	651151	513733	22	30	11
5115	Phillips James "E" No. 2	648211	513943	22	30	11
5122	Phillips James "E" No. 1	649498	512506	22	30	11
5322	Phillips James E Federal No. 9	651450	510150	22	30	11
5104	Phillips James E No. 15	652468	511180	22	30	12
5105	Phillips James "E" No. 14	653458	512523	22	30	12
5106	Phillips James "E" No. 13	652138	512516	22	30	12
5107	Phillips James "E" No. 12	653460	513839	22	30	12
5109	Phillips James "E" No. 11	652140	513832	22	30	12
5110	Bass James Ranch Unit No. 48	651813	510184	22	30	12
5323	Bass James Ranch Unit No. 70	654900	510000	22	30	12
773	D-120	653125	507725	22	30	13
1142	WIPP 33	653981	505790	22	30	13
5103	Mitchell Energy Apache "13" Federal No. 1	656517	507932	22	30	13
774	D-48	649500	504175	22	30	14
1143	WIPP 25	643343	505868	22	30	15
783	I-147	634100	499990	22	30	20
784	NM Potash & Chemical #1 (I-D)	631650	503200	22	30	20
785	IMCC #145 (I-145)	634150	502700	22	30	20
786	IMCC # 143 (I-143)	631425	502700	22	30	20
787	I-114	631500	499950	22	30	20
788	D-33	640800	498850	22	30	21
789	I-111	638175	502650	22	30	21
790	I-112	636900	500050	22	30	21
791	D-263	645950	501475	22	30	22
792	D-264	643700	502000	22	30	22
794	D-259	650400	500700	22	30	23
795	D-261	647750	503625	22	30	23
796	D-262	646300	503875	22	30	23
797	D-202	647375	499950	22	30	23
798	D-260	650775	503000	22	30	23
799	D-255	650250	498800	22	30	23
800	D-258	648900	502500	22	30	23
802	D-104	655500	501500	22	30	24
1144	P-14	652159	499082	22	30	24
1145	P-12	656692	503896	22	30	24
5126	Mitchell Apache "24" Federal No. 1	656552	499922	22	30	24
806	D-235	652375	496450	22	30	25
5124	Mitchell Apache "25" Federal No. 1	656234	497001	22	30	25
5125	Mitchell Apache "25" Federal Com. No. 2	655598	494097	22	30	25
807	D-203	650350	496050	22	30	26
808	D-254	648400	498400	22	30	26
809	D-233	646300	498400	22	30	26
810	D-234	651000	493650	22	30	26
811	D-200	641000	494100	22	30	27
812	D-198	643625	493475	22	30	27
813	D-181	643750	496200	22	30	27
814	D-231	646100	495900	22	30	27
815	D-232	642350	494800	22	30	27
5324	Richardson & Bass Federal Legg No. 1	644179	498036	22	30	27

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816	D-224	639500	497375	22	30	28
817	D-219	639750	494650	22	30	28
818	D-216	637000	494600	22	30	28
819	D-185	641000	496100	22	30	28
820	D-167	638350	495850	22	30	28
821	D-225	637000	496800	22	30	28
822	D-278	635700	494600	22	30	28
1147	WIPP 26	635509	496516	22	30	29
850	D-199	638400	491000	22	30	33
851	D-218	639500	492150	22	30	33
852	D-196	638500	490400	22	30	33
853	D-221	639800	489500	22	30	33
854	D-195	638600	490750	22	30	33
855	D-194	639600	493300	22	30	33
856	D-217	637000	492100	22	30	33
857	D-170	638500	490800	22	30	33
858	D-38	638250	493300	22	30	33
859	D-168	640800	493250	22	30	33
860	D-169	635700	493300	22	30	33
861	D-228	638200	489975	22	30	33
862	D-226	637100	490750	22	30	33
863	D-180	643700	490500	22	30	34
864	D-188	641150	490900	22	30	34
865	D-230	642250	494700	22	30	34
866	D-36	646000	493150	22	30	34
867	USGS 3 (GS 3)	641350	488450	22	30	34
868	D-229	642400	492875	22	30	34
229	D-250	649300	490875	22	30	35
870	D-250-A	649247	490985	22	30	35
871	D-249	646675	490775	22	30	35
873	D-160-S	652750	490650	22	30	36
5116	Shell James Ranch No. 1	654924	488781	22	30	36
5117	Enron James Ranch Unit No. 71	656248	493126	22	30	36
5118	Enron James Rand Unit No. 37	656263	490090	22	30	36
5119	Enron James Ranch Unit No. 19	654945	490094	22	30	36
5120	Belco James Ranch No. 11	652484	491463	22	30	36
5121	Enron James Ranch Unit No. 18	655815	491378	22	30	36
5123	Bass James Ranch Unit No. 29	653880	490100	22	30	36
5325	Bass James Ranch Unit No. 41	653887	488787	22	30	36
5000	Hanagan No. 2 Unocal-HPC	687453	517817	22	31	1
5002	Phillips Molly State No. 2	685143	517807	22	31	1
5004	Phillips Molly State No. 4	683697	517798	22	31	1
5005	Pogo Federa 1 No. 1	685149	516803	22	31	1
5006	Pogo Federal 1 No. 3	687459	516799	22	31	1
5007	Pogo 1 Federal No. 4	683829	516803	22	31	1
5008	Pogo Federal 1 No. 5	684173	515489	22	31	1
5009	Pogo Federal 1 No. 6	685062	515399	22	31	1
5010	Pogo Federal 1 No. 6	686144	515490	22	31	1
5011	Yates Unocal "AHU" Federal No. 2	687775	519132	22	31	1
5012	Pogo Federal 1 No. 2	686469	516801	22	31	1
5088	Hanagan No. 1 Unocal-HPC	686461	518138	22	31	1
5326	Phillips Molly State No. 1	685129	519123	22	31	1
5327	Phillips Molly State No. 3	683812	519115	22	31	1
5328	Yates Unocal "AHU" Federal No. 1	686455	519124	22	31	1
5014	Pogo State "2" No. 3	682845	516790	22	31	2
5329	Yates Flora "AKF" State No. 1	680237	515105	22	31	2

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5330	Yates Graham "AKB" State No. 2	682839	517800	22	31	2
5331	Yates Graham "AKB" State No. 1	682828	519113	22	31	2
5332	Yates Flora "AKF" State No. 2	680200	516400	22	31	2
5333	Pogo State 2 No. 2	680850	515250	22	31	2
5334	Pogo State 2 No. 1	682863	514819	22	31	2
5335	Bryon McKnight & Troporo Campana No. 1	657463	517615	22	31	6
5336	Yates Llama "ALL" Federal No. 1	657789	509389	22	31	7
1149	DOE 2	667317	509876	22	31	8
1149	Fenix & Scissons Inc., WIPP No. DOE-2	667317	509876	22	31	8
1150	WIPP 11	667700	513751	22	31	9
1150	WIPP 11	667700	513751	22	31	9
1151	WIPP 34	669449	509375	22	31	9
1152	WIPP 14	665336	509260	22	31	9
1153	AEC 8	679951	513567	22	31	11
1153	AEC 8	679951	513567	22	31	11
5015	Yates Martha "AIK" Federal No. 1	682796	509554	22	31	11
5016	Yates Martha "AIK" Federal No. 2	682885	511198	22	31	11
5019	Yates Martha "AIK" Federal No. 5	682877	512529	22	31	11
5020	Yates Martha "AIK" Federal No. 6	682869	513845	22	31	11
5337	Yates Martha "AIK" Federal No. 3	681576	509860	22	31	11
5338	Yates Martha "AIK" Federal No. 4	681568	511172	22	31	11
5021	Pogo Federal 12 No. 2	683872	511208	22	31	12
5022	Pogo Federal 12 No. 4	683537	512529	22	31	12
5023	Pogo Federal 12 No. 5	683529	513841	22	31	12
5024	Pogo Federal 12 No. 6	684860	511537	22	31	12
5025	Pogo Federal 12 No. 7	684852	512857	22	31	12
5027	Pogo SCL Federal No. 2	686504	512529	22	31	12
5028	Pogo Federal 12 No. 3	685202	509565	22	31	12
5339	Pogo Federal 12 No. 8	684844	514173	22	31	12
5029	Texaco Federal Neff "13" No. 2	687857	507261	22	31	13
5030	Texaco Neff 13 No. 3	686552	504607	22	31	13
5032	Texaco Federal Neff 13 No. 6	683563	508250	22	31	13
5033	Texaco Federal Neff 13 No. 7	683570	506937	22	31	13
5034	Texaco Federal Neff 13 No. 8	683579	505578	22	31	13
5340	Texaco Federal Neff 13 No. 5	685216	507264	22	31	13
5341	Pogo Neff 13 No. 1	686544	505923	22	31	13
1154	P-20	683197	504767	22	31	14
5035	Yates Dolores "AIL" Federal No. 3	682803	507264	22	31	14
5036	Yates Dolores "AIL" Federal No. 2	682812	505893	22	31	14
5037	Yates Dolores "AIL" Federal No. 1	682796	508580	22	31	14
1155	Fenix & Scisson, WIPP HYDRO H-5c	677878	508198	22	31	15
1156	P-21	677862	508351	22	31	15
5342	Clayton W. Williams Badger Unit Federal No. 1	674707	505867	22	31	15
1158	Fenix & Scisson, WIPP #13	663885	506464	22	31	17
1159	WIPP 12	667371	504068	22	31	17
1160	P-5	667286	504120	22	31	17
1161	P-13	656973	509039	22	31	18
1162	Fenix and Scisson, Inc., WIPP H-6c	657232	508884	22	31	18
1163	P-3	664351	498747	22	31	20
1164	Fenix & Scisson, Inc., WIPP #18	667446	502935	22	31	20
1165	Fenix & Scisson, Inc., WIPP #22	667453	501165	22	31	20
1166	Fenix & Scisson, Inc., WIPP #21	667459	500071	22	31	20
1167	Fenix & Scisson, Inc., WIPP #19	667453	501632	22	31	20
1168	ERDA 9	667301	498887	22	31	20
1641	H-16	666231	499726	22	31	20
1643	H-18	662621	502926	22	31	20

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1169	P-11	678217	503781	22	31	23
1170	P-19	680377	500362	22	31	23
5038	Pogo Federal 23 No. 1	682604	499315	22	31	23
5039	Pogo Federal "23" No. 2	682601	500402	22	31	23
5040	Pogo Federal "23" No.3	682599	501631	22	31	23
5041	Pogo Federal 23 No. 5	682744	503275	22	31	23
5343	Texas Crude Wright Federal 23 No. 1	682933	498982	22	31	23
5042	Texaco Getty Federal 24 No. 4	685241	500628	22	31	24
5043	Texaco Getty Federal 24 No. 5 SWD	684906	502953	22	31	24
5044	Texaco Getty Federal 24 No. 2	683925	499308	22	31	24
5045	Getty Federal #24-1	686559	501978	22	31	24
5048	Texaco Getty Federal 24 No. 3	686227	503289	22	31	24
5046	Pogo Neff Federal No. 2	683605	497005	22	31	25
5047	Pogo Federal Neff No. 1	685247	497996	22	31	25
5344	Pogo Neff Federal No. 3	684027	498226	22	31	25
1172	P-18	682589	493556	22	31	26
1173	P-10	678410	496383	22	31	26
5049	Pogo Federal 26 No. 1	682760	498050	22	31	26
5050	Pogo Federal 26 No. 2	681299	496693	22	31	26
5051	Pogo Federal "26" No. 3	680158	498061	22	31	26
5052	Pogo Federal 26 No. 4	678359	498083	22	31	26
5053	Pogo Federal 26 No. 5	681039	498331	22	31	26
5054	Pogo Federal 26 No. 6	678367	496708	22	31	26
5055	Pogo Federal 26 No. 7	680015	496696	22	31	26
1174	P-4	671327	493521	22	31	28
1175	DOE-1	672206	493563	22	31	28
1176	P-2	672609	498536	22	31	28
1630	Department of Energy WIPP No. H-15	672606	498572	22	31	28
1177	H-1	666400	497991	22	31	29
1178	Department of Energy, H-14	662815	493697	22	31	29
1179	ERDA, Hydrological H-2c	663907	498002	22	31	29
1180	Sandia National Laboratories, Hydrological No. 3	667377	495440	22	31	29
1181	P-1	662804	493651	22	31	29
1182	P-6	657144	496090	22	31	30
1183	P-15	657148	488426	22	31	31
1184	H-11	672647	489617	22	31	33
1185	P-9	672678	489599	22	31	33
5056	Yates David Ross "AIT" Federal No. 1	682660	491396	22	31	35
5057	Union of CA Medano State Com. Well No. 1	685311	490031	22	31	36
5345	Siete Ottowa State No. 1	706377	516673	22	32	3
5346	Santa Fe Trumpeter 4 State No. 1	702432	515309	22	32	4
5347	Getty Bilbrey Federal Com. No. 1	701090	519263	22	32	4
5348	Getty Bilbrey Federal No. 1	697134	519223	22	32	5
5349	Yates Rosemary "AJB" Federal No. 1	689111	516479	22	32	6
5350	Pogo Federal 6 No. 1	688768	519007	22	32	6
5351	Amoco Federal "CK" Com. No. 1	693182	517875	22	32	6
5352	Strata Flamenco Federal No. 1	689152	510880	22	32	7
5353	Santa Fe White Swam "9" Federal No. 1	704165	509787	22	32	9
5354	Santa Fe White Swam "9" Federal No. 4	703788	512676	22	32	9
5355	Maralo Wild Turkey "9" state No. 1	703458	511356	22	32	9
5356	Maralo Wild Turkey "10" state No. 1	704823	511448	22	32	10
5357	WTI Barr None Federal No. 1	705090	512723	22	32	10
5358	Phillips Emerald Federal No. 1	705153	510128	22	32	10
5359	Maralo Prohibition Federal No. 2	711819	511456	22	32	11
5158	Maralo Prohibition Federal Unit No. 1	715576	512845	22	32	12
5159	Pogo WBR Federal No. 1	719299	507585	22	32	13

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5160	Ray Smith B&H Federal No. 1	719651	504941	22	32	13
5161	Maralo Prohibition Federal Unit No. 4	713055	507207	22	32	14
5162	Meridian Red Tank Federal No. 4	711890	505887	22	32	14
5163	Meridian Red Tank Federal No. 1	711774	504537	22	32	14
5164	Meridian Red Tank Federal No. 3	710784	504523	22	32	14
5165	Carper Red Tank Unit No. 2 (SWD?)	711772	504864	22	32	14
5166	Meridian Red Tank Federal No. 5 (SWD?)	712743	504551	22	32	14
5360	Maralo Prohibition Federal Unit No. 6	714045	507207	22	32	14
5361	Meridian Redchecker 14 No. 2	714051	505880	22	32	14
5362	Meridian Redchecker 14 No. 1	714060	504564	22	32	14
5363	Meridian Prohibition Federal No. 5	711910	507207	22	32	14
5364	Meridian Red Tank Federal No. 6	711735	505887	22	32	14
5167	Superior No. 1 Connally Federal	707811	506124	22	32	15
5168	Strata Paisano Federal No. 3	705128	508426	22	32	15
5169	Strata Paisano Federal No. 2	706130	507124	22	32	15
5170	Strata Paisano Federal No. 1	704937	507436	22	32	15
5171	Strata Lechuza Federal No. 5	704824	505759	22	32	15
5173	Strata Lechuza Federal No. 3	707493	504806	22	32	15
5174	Strata Lechuza Federal No. 2	706145	505775	22	32	15
5175	Strata Lechuza Federal No. 1	704962	504975	22	32	15
5365	Strata Lechuza Federal No. 4	706154	504786	22	32	15
5176	Yates Kiwi "AKX" State No. 3	704158	507100	22	32	16
5177	Yates Kiwi "AKX" State No. 2	704170	505751	22	32	16
5179	Yates Kiwi "AKX" State No. 4	702868	504415	22	32	16
5180	Yates Kiwi "AKX" State No. 5	702851	506059	22	32	16
5181	Yates Kiwi "AKX" State No. 6	701542	504730	22	32	16
5182	Yates Kiwi "AKX" State No. 7	702509	507416	22	32	16
5183	Yates Kiwi "AKX" State No. 8	701519	507402	22	32	16
5184	Yates Kiwi "AKX" State No. 9	704139	509067	22	32	16
5366	Yates Kiwi "AKX" State No. 1	704185	504435	22	32	16
5185	Yates Cleary "AKC" Feceral No. 1	697249	506004	22	32	17
5186	Yates Cleary "AKC" Federal No. 2	694250	508981	22	32	17
5188	Pogo Livingston Ridge Federal No. 1	692941	508635	22	32	18
5189	Pogo Livingston Ridge Federal No. 3 "ZAP"	688841	508765	22	32	18
5190	Pogo East Livingston Ridge Federal No. 3	691960	507160	22	32	18
5367	John H. Trigg Federal Jennings No. 1	693293	504667	22	32	18
5368	Ralph Lowe Bass Federal No. 1	693314	499351	22	32	19
5191	Zonne Federal No. 1	697274	502059	22	32	20
5192	Union of CA Federal Gilmore No. 1 (Cerc Fed 1 SWD)	703873	500772	22	32	21
5193	Strat Cercion Federal No. 3	702536	503708	22	32	21
5194	Strat Cercion Federal No. 1	703864	502131	22	32	21
5369	Strata Cercion Federal No. 5	704183	503788	22	32	21
5195	Trigg Federal Red Tank No. 1-22	705188	502158	22	32	22
5196	Strata Cercion Federal No. 4	706503	502505	22	32	22
5197	Strata Cercion Federal No. 2	705507	503807	22	32	22
5370	Pogo Prize Federal No. 13	709485	500842	22	32	22
5371	Pogo Prize Federal No. 10	709491	499529	22	32	22
5198	Meridian Checkerboard 23 Federal No. 6	710224	499756	22	32	23
5199	Pogo Red Tank 23 Federal No. 2	714066	501040	22	32	23
5200	Meridian Checkerboard 23 No. 16	714102	501921	22	32	23
5201	Meridian Checkerboard 23 Federal No. 13	714068	502597	22	32	23
5202	Meridian Checkerboard 23 Federal No. 12	714475	503927	22	32	23
5203	Meridian Checkerboard 23 Federal No. 8	713073	502259	22	32	23
5204	Meridian Checkerboard 23 Federal No. 4	711784	503533	22	32	23
5206	Meridian Checkerboard 23 Federal No. 5	710807	501189	22	32	23
5372	Meridian Checkerboard 23 Federal No. 11	713074	503575	22	32	23

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5373	Meridian Checkerboard 23 Federal No. 3	712107	501921	22	32	23
5374	Meridian Checkerboard 23 Federal No. 2	713409	499262	22	32	23
5375	Meridian Checkerboard 23 Federal No. 1	713126	500954	22	32	23
5376	Meridian Checkerboard 23 Federal No. 9	712130	499893	22	32	23
5377	Meridian Checkerboard 23 Federal No. 7	711795	500552	22	32	23
5378	Meridian Checkerboard 23 Federal No. 10	710800	502232	22	32	23
5208	Pogo Covington "A" Federal No. 2	715786	498671	22	32	25
5380	Pogo Covington "A" Federal No. 8	715772	493995	22	32	25
5381	Pogo Covington "A" Federal No. 9	717086	494153	22	32	25
5382	Pogo Covington "A" Federal No. 1	717041	498309	22	32	25
5209	Pogo Covington "A" Federal No. 18	713148	498645	22	32	26
5210	Pogo Red Tank "26" Federal No. 1	711731	495498	22	32	26
5211	Pogo Red Tank "26" Federal No. 2	710485	498569	22	32	26
5383	Pogo Red Tank "26" Federal No. 3	710172	496920	22	32	26
5384	Pogo Red Tank "26" Federal No. 4	710179	495917	22	32	26
5212	Pogo Federal 27 No. 1	706900	493891	22	32	27
5214	Pogo Exxon Federal 27 No. 3	709193	495630	22	32	27
5385	Pogo Prize Federal No. 4	709089	497007	22	32	27
5386	Pogo Prize Federal No. 5	709176	498222	22	32	27
5387	Pogo Exxon Federal 27-2	709212	494256	22	32	27
5216	Pogo Red Tank 28 Federal No. 3	702247	498452	22	32	28
5389	Pogo Red Tank "28" Federal No. 1	704225	498483	22	32	28
5217	Bass Perry Federal No. 1	692059	492737	22	32	31
5218	Pogo Proximity 31 No. 4	691954	492737	22	32	31
5219	Enron Silverton 31 Federal No. 1	689284	488859	22	32	31
5220	Yates Lotus "ALT" State No. 2	697351	491465	22	32	32
5221	Pogo Red Tank 34 Federal No. 3	709225	492852	22	32	34
5223	Pogo Red Tank 34 Federal No. 2	709223	491671	22	32	34
5390	Pogo Red Tank "34" Federal No. 14	706913	492866	22	32	34
5391	Pogo Red Tank "34" Federal No. 4	707918	491618	22	32	34
5392	Pogo Red Tank "34" Federal No. 1	708236	492940	22	32	34
5224	Pogo Red Tank 35 Federal No. 1	710208	492972	22	32	35
5393	Pogo Red Tank "35" Federal No. 3 SWD	710868	490662	22	32	35
5394	Shell Bootleg Ridge Unit No. 1	717094	493357	22	32	36
5395	Meridian Mule Deer 36 State No. 1	718414	493357	22	32	36
5396	Meridian Mule Deer 36 State No. 2	718084	491707	22	32	36
5397	Meridian Mule Deer 36 State No. 4	719534	493027	22	32	36
5242	Texas Pacific Reed Federal No. 1	731495	517159	22	33	4
1631	Dual Production Co. Richardson-Bass State No. 1	730500	515575	22	33	5
5244	Meridian Dagger Lake State No. 1	728715	515179	22	33	5
5241	Superior San Simone State Com No. 1	723435	518149	22	33	6
5239	Superior SST State 7 No. 1	723435	511549	22	33	7
5240	Cabot State "K" No. 1	720922	510222	22	33	7
5238	Meridian Dagger Lake "8" Federal No. 1	727370	514213	22	33	8
5398	Meridian Dagger Lake 8 Fed No. 2	728360	514543	22	33	8
5236	Dual Hudson Federal No. 1	731330	514213	22	33	9
1632	Getty Oil Company Getty Federal 15 No. 1	739420	506414	22	33	15
5399	Getty Federal 15 No. 1	739333	506351	22	33	15
5400	Getty Federal 15 Com "B" No. 1	738013	508991	22	33	15
5237	Pogo EBR Federal No. 1	726123	506282	22	33	17
5234	Pogo State NBR No. 2	722146	507594	22	33	18
5235	Pogo State NBR No. 1	723492	506273	22	33	18
5233	Santa Fe Bootleg Ridge 19 State No. 1	721313	503306	22	33	19
5401	Collins & Ware White Lightning Federal No. 1	724872	500986	22	33	19
1633	Davis and Collins Conoco Federal #1	726246	502380	22	33	20
5232	Davis & Collins Conoco Federal No. 1	726170	502337	22	33	20

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5231	Yates Pronghorn "ACZ" Federal No. 1	726246	495713	22	33	29
5229	Yates pronghorn Unit No. 2	724919	497052	22	33	30
5230	Mitchell Bighorn "30" State No. 2	722064	496705	22	33	30
1639	Helbing & Podpechan Shell State #1-B	726355	489162	22	33	32
5226	Helbing & Podpechan Shell State No. 1-B	726303	489144	22	33	32
5402	R.B. Farris Phillps State No. 1	735512	493164	22	33	33
5227	CP Miller Humble State No. 1	739511	489206	22	33	34
5228	Amoco Federal "BG" No. 1	743432	491880	22	33	35
1226	Mesa Petroleum Company, Nash Unit #3	621510	479547	23	29	12
1227	Mesa Petroleum, Nash Unit #5	624533	474546	23	29	13
1228	Mesa Petroleum Company, Nash Unit #4	624517	476547	23	29	13
1229	Mesa Petroleum Company, Nash Unit #1	624195	475560	23	29	13
5127	Belco (Bass?) Belco-James Ranch No. 10	656055	486279	23	30	1
5128	Belco Hudson Federal No. 1	653563	486310	23	30	1
5129	Belco James Ranch Unit No. 3	655287	484839	23	30	1
907	D-227	642275	486850	23	30	3
1230	Fenix & Scisson, Inc., WIPP H-7c	648766	475035	23	30	14
1231	Skelly Oil Company, Forty-Niner Rdige Unit #1	638975	474206	23	30	16
5130	Texaco Forty-Niner Ridge Unit No. 3	637575	475238	23	30	16
1232	Mesa Petroleum Company, Nash Unit #6	625185	475553	23	30	18
1234	Skelly Oil Company, Forty Niner Ridge Unit 2	639004	470246	23	30	21
5131	Phillips Sandy Unit No. 1	652320	470288	23	30	24
1236	ERDA 10	644058	461520	23	30	34
1237	Atomic Energy Commission, U.S.G.S. Test Hole #1	644000	458900	23	30	34
5154	Union of CA Barclay Federal No. 1	685369	483466	23	31	1
5155	Owens Union Federal No. 1	684036	484770	23	31	1
5153	Continental State AA-2 No. 1	682702	487402	23	31	2
1642	H-17	673837	484304	23	31	3
1239	P-17	667955	484185	23	31	4
1240	P-8	667664	48471	23	31	4
1241	Fenix & Scisson, WIPP No. H-4C	662991	487607	23	31	5
1242	P-7	662669	487090	23	31	5
1243	MP Grace Cabin Baby Federal No. 1	665559	486111	23	31	5
1244	P-16	663914	483737	23	31	5
5147	Belco James Ranch Unit 14	658934	482782	23	31	6
5149	Enron James Ranch Unit No. 17	658924	485883	23	31	6
5150	Bass James Ranch No. 13	657800	486514	23	31	6
5151	Continental James Ranch Unit No. 7	660269	485996	23	31	6
5152	Bass James Ranch Unit No. 30	659943	484664	23	31	6
5141	Santa Fe North Pure Gold "8" Federal No. 9	666705	478105	23	31	8
5142	Santa Fe North Pure Gold "8" Federal No. 6	665259	479417	23	31	8
5143	Santa Fe North Pure Gold "8" Federal No. 5	665254	478108	23	31	8
5144	Santa Fe North Pure Gold "8" Federal No. 3	666887	480967	23	31	8
5145	Santa Fe North Pure Gold "8" Federal No. 2	666707	479421	23	31	8
5146	Santa Fe North Pure Gold "8" Federal No. 1	666896	479418	23	31	8
5148	Belco James Ranch Unit No. 15	662386	478118	23	31	8
5134	Santa Fed North Pure Gold "9" No. 9	670866	477804	23	31	9
5135	Santa Fe North Pure Gold "9" Federal No. 7	669534	480782	23	31	9
5136	Santa Fe North Pure Gold "9" Federal No. 4	668207	480778	23	31	9
5137	Santa Fe North Pure Gold "9" Federal No. 5	668532	481620	23	31	9
5138	Santa Fe North Pure Gold "9" Federal No. 2	668221	478099	23	31	9
5139	Santa Fe North Pure Gold "9" Federal No. 1	669545	477786	23	31	9
5140	Santa Fe Pure Gold "4" Federal No. 1	669525	481862	23	31	9
5133	Max M. Wilson Bauerdorf-Federal No. 1	683072	478191	23	31	11
5132	Devon Todd 13 'O' Federal No. 15	686664	473054	23	31	13
1246	Texas American Oil Corp., Todd Federal 14 No. 1	680178	474279	23	31	14

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1247	H-12	678079	477535	23	31	15
1248	El Paso Natural Gas Company, Arco State #1-16	669610	474216	23	31	16
1249	Patoil Corporation, Muse Federal #1	672277	467625	23	31	21
1250	Texas American Oil Corporation, Todd Federal 23 #3	681682	468971	23	31	23
1251	Texas American Oil Corp., Todd 23 Federal No. 1	681843	467651	23	31	23
1252	Skelly Oil Company, Todd 25 Federal #1-Z	685481	465032	23	31	25
1253	Texas American Oil Corp., Todd Federal #2	681861	465011	23	31	26
1254	Texas American Oil Corp., Todd Federal 26 No. 1	681531	465011	23	31	26
1255	Texas American Oil Corporation, Todd Federal #4	681522	466331	23	31	26
1256	Patoil Corporation, Wright-Federal #1	673622	463667	23	31	27
1257	El Paso Natural Gas Company, Mobil-Federal #1	665712	463629	23	31	29
1258	J.A. Leonard, Continental State No. 1	663060	460967	23	31	32
1259	Patoil Corporation, Wright-Federal #2	668367	459687	23	31	33
1260	Charles P. Miller, Pauley Harrison State #1	684234	457144	23	31	36
5245	Yates Saffron Unit No. 1	713552	486079	23	32	2
5246	OB Kiel, Jr. Federal No. 1	709293	486352	23	32	3
5247	Strata Aracanga Federal No. 1	702426	483394	23	32	4
5248	Santa Fe Platinum 6 Federal No. 1	690620	483483	23	32	6
5249	JH Trigg Federal "WL" No. 5	693473	482355	23	32	7
5250	McBee Continental Federal No. 1	702718	478364	23	32	9
5251	Strata Aracanga Federal No. 2	703103	479385	23	32	9
1263	Hill & Meeker & Ambass. Oil Corp., Matthews 11 #1	713295	481143	23	32	11
5252	Exxon Central SW Oil Corp Federal No. 1	710648	481391	23	32	11
5253	Superior Triste Draw Gulf Federal No. 1	711983	478484	23	32	11
5254	Strata Urraca Federal No. 2	710666	478366	23	32	11
5255	Yates Amanda "AMN" Federal No. 1	711612	480841	23	32	11
5256	Superior Triste Draw Federal No. 1	713292	474527	23	32	14
1264	John H. Trigg, Federal Continental 1-15	708068	475817	23	32	15
1265	Skelly Oil Company, Federal Sand 18-1	693552	475663	23	32	18
1266	Kirklin Drilling Company, Federal Estill AF-1	697549	467782	23	32	20
1267	Fenix & Scisson, Inc., WIPP No. H-10c	697550	467513	23	32	20
1268	Curtis Hankamer, Gulf-Federal A-A #1	702825	471850	23	32	21
1269	H.L. Johnston, Sr., Conoco-Fields-Federal #1	720347	469019	23	32	24
1270	Continental Oil Company, Fields Federal No. 1	720027	468023	23	32	24
1271	Continental Oil Company, Fields No. 2	715716	462987	23	32	25
1272	H.L. Johnston, Sr., Wehrli-Federal #1	717674	466331	23	32	25
1273	John H. Trigg, Federal WL #3-26	715100	462200	23	32	26
1274	P.M. Drilling Company, Federal James No. 4	715050	463967	23	32	26
1275	P.M. Drilling Company, Federal Field #1	712097	462613	23	32	26
1276	John H. Trigg Company, No. 4-26 Federal WL	713741	462302	23	32	26
1277	Max Wilson, Continental Federal No. 1	701519	466491	23	32	28
1278	Curtis Hankamer, Hankamer No.1 Continental Federal	689600	457200	23	32	31
1279	Curtis Hankamer, Holder Federal #1	704201	459915	23	32	33
1280	The Pure Oil Company, Federal K No. 1	709812	458639	23	32	34
1281	PM Drilling Company, Federal James No. 3	713439	458673	23	32	35
1282	John H. Trigg, Federal WL 1-35	713096	460314	23	32	35
1283	P.M. Drilling Company, Federal-James No. 1	714738	461323	23	32	35
1284	P-M Drilling Company, Payne No. 2	712436	460967	23	32	35
1285	John H. Trigg, Federal WL No. 2-35	714425	460450	23	32	35
1286	P.M. Drilling Company, Payne Federal No. 4	710793	459958	23	32	35
1287	P-M Drilling Company, Federal-Payne No. 1	712445	459647	23	32	35
1288	P.M. Drilling Co., Federal James No. 2	713418	461308	23	32	35
1289	P.M. Drilling Company, Federal Payne No. 3	710472	458643	23	32	35
1290	Penroc Oil Corporation, Triste State #1	715726	461667	23	32	36
1291	The Pure Oil Company, Brinninstool Deep Unit #1	718764	458769	23	32	36
1292	David Fasken, Gulf State #1	716068	460023	23	32	36

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5257	Yates Jackal "ANJ" Federal No. 7	731282	486206	23	33	4
5258	Cabeen Continental Federal No. 1-P	735569	483904	23	33	4
5259	WA & ER Hudson Shell Federal No. 1	725384	483523	23	33	6
5260	Yates Pronghorn Unit No. 1	723696	486489	23	33	6
5261	Hudson Federal No. 1	721203	478534	23	33	7
5262	Yates Pronghorn AAP Federal No. 1	726068	478256	23	33	8
5263	Amoco State "IK" No. 1	738219	482615	23	33	10
1296	P-M Oil Company, Texaco State No. 1	726502	473317	23	33	17
1297	Helbing & Podpechan, #1 A Shell State	721296	473304	23	33	18
1298	Tenneco Oil Company, Skelly State #1	723819	477273	23	33	18
1299	Continental Oil Company, Marshall #3	722500	468000	23	33	19
1300	Continental Oil Company, I.J. Marshall 19-1	721347	468037	23	33	19
1301	Continental Oil Company, Marshall #4	721298	469357	23	33	19
1302	Continental Oil Company, Marshall #19-2	722584	469360	23	33	19
1303	American Quasar, Brinninstool #1	729177	470692	23	33	20
1304	Continental Oil Company, Levick Federal #1	730514	468064	23	33	20
1305	Kirklin Drilling Company, Lea State #1	725282	461456	23	33	31
1306	El Cinco Production Co., Ltd., Humble State 1-32	729247	461465	23	33	32
1307	George L. Buckles Company, State 1-35	742455	457603	23	33	35
1323	Chase Petroleum Company, Valley #1	599137	452623	24	29	5
1324	El Capitan Oil Company, Federal Reid No. 1	596182	451311	24	29	6
1325	Southern California Petrol. Corp., Federal Reid #1	596210	447966	24	29	7
1326	Southern California Petrol. Corp., Federal Reid #2	596203	448671	24	29	7
1327	Tennessee Production Comp., Valley Land Company #	593560	446643	24	29	7
1328	Tennessee Production Company, Valley Land #3	594880	447305	24	29	7
1329	Skelly Oil Company, Cedar Canyon #1	608299	446429	24	29	9
1330	Skelly Oil Company, Cedar Canyon 9D #1	607090	446318	24	29	9
1331	Skelly Oil Company, Cedar Canyon #10-1	611032	448814	24	29	10
1634	Exxon Company, USA Exxon Pouche Federal No. 1	618984	449047	24	29	11
1332	Penzoil United Incorporated, Mobil-Federal 27 #1	609826	430402	24	29	27
1333	Perry R. Bass, Poker Lake Unit #54	639064	451785	24	30	4
1334	Perry R. Bass, Poker Lake Unit #45	629692	445286	24	30	18
1335	Fenix & Scisson, Inc., WIPP H No. 8-C	650409	438581	24	30	23
1336	Hill & Meeker, Bass Federal #1-25	652561	430749	24	30	25
1337	Ford Chapman & Associates, Federal-Nettles No. 1	635146	430603	24	30	29
1338	Skelly Oil Company, Todd 2 State #1	680275	454467	24	31	2
1339	Max Wilson, Jennings Federal No. 1	677646	451788	24	31	3
1340	Jack L. McClellan, Jennings Federal No. 1	673684	455760	24	31	3
1341	Texaco, Incorporated, M.M. Stewart Federal #1	672364	455753	24	31	4
1342	Fenix & Scisson, Inc., WIPP No. H-9C	667929	453890	24	31	4
1343	Sundance Oil Company, Betty Federal #1	670056	454734	24	31	4
1344	El Paso Natural Gas Company, Sundance Federal #1	669729	454407	24	31	4
1345	American Quasar, Dunes Unit Federal #1	659117	454367	24	31	6
1346	Ambassador Oil Corporation, Federal Y #1	661902	446427	24	31	7
1347	Gulf Oil Corporation, Federal Littlefield CT #1	681595	450486	24	31	11
1348	Coquina Oil Corporation, El Paso Federal No. 1	685570	447853	24	31	12
1349	W.J. Weaver, Continental Federal #1	667174	445136	24	31	17
1350	Charles B. Read, Ritchie Federal #1	661926	441141	24	31	18
1351	Pauley Petroleum Incorporated, Jennings Federal #1	667202	439856	24	31	20
1352	David Fasken, Poker Lake #40	664587	435859	24	31	20
1353	Hill & Meeker, Carper Federal #1-21	672465	439896	24	31	21
1354	The Texas Company, T. Heflin-Federal #1	686963	435990	24	31	24
1355	Pan American Petroleum Corp., Poker Lake Unit #36	672515	430631	24	31	28
1356	Texaco, Incorporated, Cotton Draw Unit No. 67	679117	426784	24	31	35
1357	Union Oil Co. of California, Union Federal 1 #1	718807	452144	24	32	1
1358	Cabeen Exploration Corp., Continental Federal #1-L	716134	453435	24	32	1

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1359	Calco, Marathon State #1	712200	454600	24	32	2
1360	P.M. Drilling Company, Ohio State No. 1	714798	454727	24	32	2
1361	Curtis Hankamer, Bondurant Federal No. 1	692340	455854	24	32	6
1362	Gulf Oil Corporation, Federal Hanagan D #1	708240	448103	24	32	10
1363	Continental Oil Company, Wimberly #2	714841	450783	24	32	11
1364	Curtis Hankamer, Hanagan Federal No. 2	713540	446806	24	32	11
1365	Gulf Oil Corporation, Federal Hanagan D #3	714854	448130	24	32	11
1366	Gulf Oil Corporation, Federal Hanagan D #2	713534	448126	24	32	11
1367	Curtis Hankamer, Gulf Hanagan #1	714860	446810	24	32	11
1368	Continental Oil Company, Wimberly #1	713527	449453	24	32	11
1369	Continental Oil Company, Wimberly 12 #1	720134	450839	24	32	12
1370	Continental Oil Company, Wimberly 12 #2	720140	449519	24	32	12
1371	Curtis Hankamer, Hanagan Federal No. 3	716167	449475	24	32	12
1372	Westates Petroleum Corp. of Texas, Woolley #1	720177	441624	24	32	13
1373	Continental Oil Company, Wimberly A #1	718837	445548	24	32	13
1374	Tenneco Oil Company, #1 USA Jennings	712210	445483	24	32	14
1375	Tenneco Oil Co., USA Jennings N.M. 033503 No. 2	711145	441759	24	32	14
1376	Tenneco Oil Company, Jennings Federal No. 4	711903	442868	24	32	14
1377	Tenneco Oil Co., USA Jennings N.M. 033503 Well #3	713549	445486	24	32	14
1378	Gulf Oil Corporation, Federal Hanagan B #2	709545	441517	24	32	15
1379	Gulf Oil Corporation, Federal Hanagan B #3	709593	442837	24	32	15
1380	Tenneco Oil Company, Hicks-Federal #1	706955	441486	24	32	15
1381	Gulf Oil Corporation, Federal Hanagan B #1	708285	441502	24	32	15
1382	Charles B. Read, Bradley #1	708319	437538	24	32	22
1383	Charles B. Read, Bradley #2	709298	438873	24	32	22
1384	Tenneco Oil Company, U.S. Smelting U.S.A. #2	705653	438831	24	32	22
1385	Tenneco Oil Company, U.S. Smelting U.S.A. Well #3	709639	437553	24	32	22
1386	Tenneco Oil Company, U.S Smelting USA #4	708641	438536	24	32	22
1387	Tennessee Gas Transmission Co., US Smelting USA #	708297	440182	24	32	22
1388	Tenneco Oil Company, U.S. Smelting, USA No. 5	709978	436567	24	32	22
1389	Curtis Hankamer, Ernest Federal #1	710948	438878	24	32	23
1390	Charles B. Read, Bradley #3	714900	440200	24	32	23
1391	Ralph E. Williamson, Wright Federal No. 1	708338	434898	24	32	27
1392	Union Oil of California, Paduca Federal #1	692468	433403	24	32	30
1393	Texaco Incorporated, Cotton Draw Unit Well #72	704296	425611	24	32	33
1394	Texaco, Incorporated, Cotton Draw Unit #69	706962	426960	24	32	34
1395	Sid W. Richardson, Inc., Federal Delbasin #1	710915	425681	24	32	35
1396	Continental Oil Company, Bell Lake Unit #7	751703	456332	24	33	1
1635	Getty Oil Company HNG State 4-F #1	732920	454890	24	33	4
1397	Hondo Drilling Company, Gulf N.W. #2	721439	453491	24	33	6
1398	Hondo Drilling Company, Gulf State NW #1	721447	452171	24	33	6
1399	Tom L. Ingram, State O #2	721460	449531	24	33	7
1400	Tom L. Ingram, State O #1	721454	450851	24	33	7
1401	Tom L. Ingram, State P #1	722542	451190	24	33	7
1402	George W. Riley Incorporated, State #1-7	725371	446943	24	33	7
1403	David Fasken, Gulf State #7-2	723000	449250	24	33	7
1404	Sunray Mid-Continent Oil Co., N.M. State A.G. 1	726681	450892	24	33	8
1405	Byard Bennett, Holland #1	751783	444434	24	33	13
1406	Tenneco Oil Company, State Lowe #1	726735	441659	24	33	17
1407	Robert B. Holt, Holly-State #1	729340	445646	24	33	17
1408	Continental Oil Company, State BB 20 No. 1	728092	436379	24	33	20
1409	F.R. Jackson, State #1	737312	439079	24	33	22
1410	Tenneco Oil Company, Sunray State #1	738682	432477	24	33	27
1636	Getty Oil Company Getty 28 State No. 1	735022	432456	24	33	28
1411	Tidewater Oil Company, State AP #1	729458	431107	24	33	29
1412	Kirklin Drilling Co., Inc., Continental State #1	721192	435351	24	33	30

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1413	Albert Gackle Operator, Continental State #1	725503	427126	24	33	31
1414	Gulf Oil Corp. & Kirklin Drilling, #1 Lea St. GX	751903	429917	24	33	36
1425	J. Glen Bennett, Superior Federal #1-3	613857	423808	25	29	3
1426	J. Glen Bennett, Superior #1-8			25	29	8
1427	Neil H. Wills, Superior Federal #1	603281	414470	25	29	8
1428	Mobil Oil Corporation, Corral Draw Unit #1	616520	410501	25	29	14
1429	J. Glen Bennett, Superior Federal 15 No.1	609901	409148	25	29	15
1430	Mobil Oil Corporation, Corral Draw Unit #2	611251	404764	25	29	22
1431	J. Glen Bennett, No. 1-26 Superior Federal	619292	398583	25	29	26
1432	J. Glen Bennett, Superior Federal 1-27	609987	398529	25	29	27
1433	Bell Petroleum Company, Federal #1	600565	402550	25	29	29
1434	Bell Petroleum Company, Cities Service Federal #1	597974	398534	25	29	30
1637	Duncan Drilling Company Slater A #1	598062	394496	25	29	31
1436	Pat Oil Corporation, R & B Federal #1	637835	422714	25	30	4
1437	J.M.C. Ritchie & Chambers & Kennedy, #1 Hopp Fed.	636541	420038	25	30	4
1438	Fred Pool Drilling Company, Superior State #1	635232	417381	25	30	8
~~1439~~	~~Ralph Lowe, Poker Lake State #1~~			~~25~~	~~30~~	~~8~~
1441	Ralph Lowe, T&P State #1			25	30	8
1442	Ralph Lowe, Superior State #1			25	30	8
1443	Ralph Lowe, Poker Lake State #3			25	30	8
~~1444~~	~~Alamo Corporation, Poker Lake Unit #5X-1A~~			~~25~~	~~30~~	~~10~~
1445	Bass Enterprises, Poker Lake #44	644427	417425	25	30	10
~~1446~~	~~Ralph Lowe, #1-X R&B Federal A~~			25	30	~~17~~
~~1447~~	~~Alamo Corporation, Poker Lake Unit #11A-7~~			~~25~~	~~30~~	~~17~~
1448	J. Ray Stewart, Poker Lake #61	631187	411967	25	30	17
1449	Jubilee Energy Corporation, Poker Lake Unit 64	632170	413637	25	30	17
1450	J. Ray Stewart, 66 Poker Lake Unit	630863	410592	25	30	17
1451	Perry R. Bass, Jennings-Federal No. 1	628542	413268	25	30	18
~~1452~~	~~Ralph Lowe, R&B Federal #1~~			25	30	18
1453	Alamo Corporation, Poker Lake #12A-9	628559	409261	25	30	18
~~1454~~	~~Central States Oil Company, Poker Lake Unit No. 38~~			25	30	19
1455	J.R. Stewart, Poker-Lake Unit No. 65	629888	407945	25	30	19
1456	Perry R. Bass, Continental-Federal #2	631231	405274	25	30	20
1457	Perry R. Bass, Continental Federal #1	631208	407957	25	30	20
~~1458~~	~~Alamo~~ Corporation, Poker Lake Unit ~~#6-2A~~			25	30	21
1459	Bass Enterprises Prod. Co., Poker Lake Unit No. 56	652558	398842	25	30	25
1460	Texaco Incorporated, Cotton Draw Unit No. 65	681739	422822	25	31	2
1638	Pauley Petroleum Poker Lake #46	663235	424153	25	31	5
1461	Alamo Corporation, Poker Lake Unit 7-A-3	668517	402935	25	31	28
~~1462~~	~~J.A. Leonard, Continental State No. 1~~			25	31	32
1463	Gold Metals & Santana Pet. Corp., #1 Del Basin Fed	679211	393756	25	31	35
1464	Texaco, Incorporated, Cotton Draw Unit No. 49	708283	421374	25	32	3
1465	Texaco Incorporated, E.F. Ray NCT-2 No. 1	704684	414738	25	32	9
1466	Texaco Incorporated, Cotton Draw Unit No. 52	704669	416058	25	32	9
1467	Tennessee Gas & Oil Company, Ray U.S.A. #1	705628	419030	25	32	10
1468	Texaco Incorporated, Cotton Draw Unit No. 39	705642	417710	25	32	10
1469	Texaco Incorporated, Cotton Draw Unit No. 40	706948	419047	25	32	10
1470	Texaco Incorporated, Cotton Draw Unit #66	705743	417612	25	32	10
1472	Texaco Incorporated, Cotton Draw Unit No. 60	707982	417575	25	32	10
1473	Texaco Incorporated, E.F. Ray Federal B No. 2	706962	417727	25	32	10
1474	Texaco Incorporated, E.F. Ray-Federal B Well #1	708336	415103	25	32	10
1475	Texaco Incorporated, E.F. Ray Federal No. 1	706990	415090	25	32	10
1476	Texaco Incorporated, E.F. Ray-Federal (NCT-1) No.2	706976	416410	25	32	10
1477	Tenneco Oil Company, Emily Flint Ray U.S.A. #41	705659	416068	25	32	10
1478	Westates Petroleum Corp. of Texas, Cont. Fed. #1	713646	415142	25	32	11
1479	Patoil Company, Union Federal #1	717652	409904	25	32	13

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1480	Joseph O'Neill Jr., Federal O #1	715012	409876	25	32	14
1481	Joseph O'Neill, Federal O #2	715000	411196	25	32	14
1482	Hill & Meeker, Ora Hall-Federal 14 #1	710655	412153	25	32	14
1483	Tennessee Gas Transmission, #1 USA G.E. Jordan	705679	409808	25	32	15
1484	Texaco Inc., G.E. Jordan Federal (NCT-2) Well No.1	705678	412438	25	32	15
1485	Texaco Incorporated, G.E. Jordan Federal (NCT-1)#2	706998	411149	25	32	15
1486	Tennessee Gas & Oil Company, G.E. Jordan #3	706997	413770	25	32	15
1487	Texaco Inc., G.E. Jordan Federal (NCT-1) No. 8	708343	413783	25	32	15
1488	Texaco Inc., G.E. Jordan-Federal (NCT-2) No. 2	705677	413578	25	32	15
1489	Tennessee Gas & Oil Company, G.E. Jordan USA #4	705678	411129	25	32	15
1490	Texaco Inc., G.E Jordan Federal (NCT-1) #6	708344	412463	25	32	15
1491	Tennessee Gas Transmission Co., G.E. Jordan USA #	706998	412450	25	32	15
1492	Texaco Incorporated, Cotton Draw Unit No. 46	708196	411318	25	32	15
1493	Tennessee Gas & Oil Company, State Monsanto #4	701685	409765	25	32	16
1494	Tennessee Gas Trans. Co., State E.L. Bradley #1	704358	412424	25	32	16
1495	Tenneco Oil Company, State Monsanto #6	702010	410759	25	32	16
1496	Tennessee Gas Transmission Co., State Monsanto #1	704358	411112	25	32	16
1497	Tenneco Oil Company, State Monsanto #5	703368	410772	25	32	16
~~1498~~	~~Tenneco Oil Company, Monsanto State #8~~			25	32	16
1499	Tennessee Gas & Oil Company, State Bradley #2	704357	413744	25	32	16
1500	Tenneco Oil Company, State Monsanto #7	700697	409426	25	32	16
1501	Tenneco Oil Company, State E.L. Bradley #3	702003	412066	25	32	16
1502	Continental Oil Company, State Z 16 #1	703038	412408	25	32	16
1503	Tennessee Gas & Oil Company, State Monsanto #3	703039	409779	25	32	16
1504	Tennessee Gas & Oil Company, Monsanto #2	704348	409814	25	32	16
1505	Shoreline Exploration Comp., Continental State #1	703368	412312	25	32	16
~~1506~~	~~Texaco Incorporated, Cotton Draw Unit #64~~			25	32	18
1507	The Texas Company, Jack B. Shaw Federal #1	692388	413613	25	32	18
1508	Texaco Inc.(formerly PRBass), Cotton Draw Unit #42	699438	405451	25	32	20
1509	Texaco Incorporated, Cotton Draw Unit #57	704083	404836	25	32	21
1510	Panther City Investment Co., Perry Federal #37	700444	404471	25	32	21
1511	Panther City Investment Co., Perry Federal #35	700423	405791	25	32	21
1512	Panther City Investment, Inc., Perry Federal No.6	701721	407126	25	32	21
1513	Panther City Invest. Inc., Perry Federal No. 7	701700	408445	25	32	21
1514	Panther City Investment Co., Perry Federal #27	704066	406156	25	32	21
1515	Panther City Investment Co., Perry Federal #28	703080	405817	25	32	21
1516	Tennessee Gas & Oil Company, #3 E.H. Perry-U.S.A.	703064	407139	25	32	21
1517	Panther City Investment Co., Perry Federal #38	701764	404484	25	32	21
~~1518~~	~~Perry R. Bass, Perry Federal #43~~			25	32	21
1519	Texaco Inc.(formerly Panther), Cotton Draw Unit 44	702763	404824	25	32	21
1520	Tenneco Oil Company, E.H. Perry USA Well No. 36	700401	407113	25	32	21
1521	Tennessee Gas & Oil Company, E.H. Perry U.S.A. 2	700380	408433	25	32	21
1522	Panther City Investment Company, Perry Federal #2	704384	407152	25	32	21
1523	Tennessee Gas Transmission Co., E.H. Perry USA #1	703047	408459	25	32	21
1524	Panther City Investment Company, Perry Federal #1	704367	408472	25	32	21
1525	Panther City Investment Company, Perry Federal #5	701743	405804	25	32	21
1526	Texaco Incorporated, G.E. Jordan Federal #3	705704	407168	25	32	22
1527	Texaco Incorporated, G.E. Jordan Federal No. 1	705687	408488	25	32	22
1528	Texaco Incorporated, Cotton Draw Unit No. 48	705386	406169	25	32	22
1529	Texaco Incorporated, G.E. Jordan Federal NCT-1 #5	706855	408657	25	32	22
1530	Texaco, C.D. Unit No. 18	706689	407514	25	32	22
1531	Joseph L. O'Neill, Federal P #1	713707	408557	25	32	23
~~1532~~	~~Texaco Incorporated, G.E. Jordan Federal No. 4~~			25	32	25
1533	Texaco Incorporated, Cotton Draw Unit No. 61	705420	403530	25	32	27
1534	Texaco Incorporated, Cotton Draw Unit No. 47	701778	403164	25	32	28
1535	Texaco Incorporated, Cotton Draw Unit No. 56	704104	403187	25	32	28

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1536	Tenneco Oil Company, J.D. Sena U.S.A. No. 1	701459	400840	25	32	28
1537	Texaco Incorporated, Cotton Draw Unit No. 51	702784	403174	25	32	28
1538	Texaco Incorporated, Cotton Draw Unit No. 54			25	32	28
1539	Texaco Incorporated, Cotton Draw Unit No. 45	700458	403151	25	32	28
1540	Texaco Incorporated, Cotton Draw Unit No. 59	704118	402197	25	32	28
1541	Texaco Incorporated, Cotton Draw Unit No. 50	701784	401844	25	32	28
1542	Tenneco Oil Company, J.D. Sena Jr. U.S.A. No. 2	700812	400834	25	32	28
1543	Texaco Incorporated, Cotton Draw Unit No. 58	699474	401821	25	32	29
1544	I.W. Lovelady, Conoco Federal #1-29	699485	399504	25	32	29
1545	Ray Smith, Ray Smith #1	689811	396460	25	32	31
1546	R.C. Graham, Conoco State No. 1	696462	396522	25	32	32
1547	Westates Petroleum Corp. of Texas, Jennings #1	704597	395266	25	32	33
1548	Hill & Meeker, Hall-Federal 1-33	700489	393906	25	32	33
1549	Hill & Meeker, Jennings-Federal 1-33	702134	396227	25	32	33
1550	Perry R. Bass, Federal-Muse #1	747971	424626	25	33	1
1551	Hill & Meeker, Bass Federal #1	730822	424518	25	33	5
1552	Santana Petroleum Corp., Annie Bass Federal #1	730872	416608	25	33	8
1553	Curtis Hankamer, Muse Federal #1	742717	419315	25	33	11
1554	Sam H. Jolliffe Jr., #1 Bass Federal	721629	413912	25	33	18
1555	Curtis Hankamer, Federal Bass #1	729628	408670	25	33	20
1556	George L. Buckles Co., Federal Marshall No. 1	736192	408690	25	33	21
1557	American Quasar Petroleum Company, Vaca Draw #1	736222	404740	25	33	21
1558	Hill & Meeker, Muse-Federal 23 #1	742865	404780	25	33	23
1559	R.B. Farris, Perry Federal 1	748141	404811	25	33	24
1560	King Resources, Pan American Federal No. 1	748160	400844	25	33	25
1561	Ashmun & Hilliard, Federal No. 1-25	752135	399551	25	33	25
1562	Robert A. Dean, Harry Dickson #1	741567	399489	25	33	27
1563	Tidewater Oil Company, Annie R. Bass Federal #1	736273	399459	25	33	28
1564	Curtis Hankamer, Conley Federal #1	736234	403420	25	33	28
1565	Tenneco Oil Company, W.H. Jennings Inc USA No. 1	727014	402046	25	33	29
1566	Tenn. Gas Transmission Co, Richardson & Bass USA#	721803	394131	25	33	31
1567	Pure Oil Company, Red Hills Unit #1	729402	393832	25	33	32
1568	Neil H. Wills, Continental State No. 1	731044	395490	25	33	32
1569	Max M. Wilson, Marathon-State #1	748205	394253	25	33	36
1570	Ashmun Hilliard Oil Company, State #1-36	748173	398204	25	33	36

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Record Tables.

FFG#	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y	
~~105~~	~~21~~	~~30~~	~~25~~	~~1098s~~	~~869w~~	~~Wills-Grosby #1~~			
~~685~~	~~22~~	~~29~~	~~6~~	~~660s~~	~~660e~~	~~#1 Eddy Federal~~			
122	22	30	9	1485s	650w	IMC #343	604,170	3585,500	
144	23	29	1	2763s	2964e	Duval #29	599825?	3577,780?	(Located in Laguna Tres Elev. ~ 905 ft)
146	23	29	1	1320n	1320e	IMC I-263	600,350	3578,170	
145	23	29	1	528s	528w	IMC I-184	599,300	3577,130	
147	23	29	4	1255n	1374e	Arco #9	595 500	3 578 180	
148	23	29	12	2600n	700e	Shell Oil Company #17 (Dogtown #)	600 550	3 576 200	
149	23	29	13	2100n	300e	Shell Oil Company #21 (Dogtown #15)	600 700	3 574 700	
151	23	29	15	1160n	3276e	Duval #14	596 540	3 575 000	
155	23	29	27	660s	1980w	Laguna Grande #2	596 600	3 570 670	
156	23	29	28	1380s	990e	#1 Laguna Grande Unit	595 680	3 570 850	
157	23	29	35	1900s	100e	A-29	599 200	3 569 430	
158	23	29	36	1800s	1200e	A-31	600 500	3 569 420	
161	23	30	2	101s	1169w	Duval #1	607 670	3 577 075	
162	23	30	2	143n	112w	Duval D-31	607 330	3 578 600	
163	23	30	2	2655n	2655e	Duval D-179	608 075	3 577 840	
164	23	30	17	2505n	317w	Shell Oil Company #6 (Dogtown #1)	602 450	3 574 600	
165	23	30	19	2244n	2096e	Duval #10	601 815	3 573 060	
~~167~~	~~23~~	~~30~~	~~26~~			~~USGS #22~~			
168	23	30	28	175s	232w	Duval #4	604 185	3 570 620	
169	23	30	29	261n	261e	Shell Oil Company #7 (Dogtown #2)	604 025	3 572 085	
170	23	30	30	215n	2300w	Shell Oil Company #20 (Dogtown #14)	601 540	3 572 075	
171	23	30	31	2640n	1750e	Arco #24	600 995	3 569 715	
172	23	30	32	1411n	2510e	Shell Oil Company #23 (Dogtown #17)	603 370	~~3 569~~ 3 570 110	
173	23	30	36	2150n	3090w	Leonard ~~??????~~ #1-S	609 960	3 570 020	
177	24	29	19	480n	330w	Bun #1	591 330	3 563 820	
179	24	29	29	1980s	660w	Ellis Federal 1-X	593 075	3 561 330	
180	24	30	2	200s	200w	Shell Oil Company #16 (Dogtown #11)	607 500	3 567 420	
181	24	30	5	1147n	406e	Shell Oil Company #11 (Dogtown #6)	604 075	3 568 580	
182	24	30	6	1990n	2185w	Arco #8	601 540	3 568 290	
183	24	30	9	2001n	2001e	Shell Oil Company #8 (Dogtown #3)	605 220	3 566 ~~700~~ 730	
184	24	30	11	316s	390w	Shell Oil Company #12 (Dogtown #)	607 615	3 565 780	
185	24	30	15	200n	200w	Shell Oil Company #13 (Dogtown #)	605 ~~775~~ 880	3 565 660	
186	24	30	16	150n	2590e	Shell Oil Company #24 (Dogtown #18)	605 040	3 565 ~~660~~ 680	
188	24	30	20	100n	1320w	Southern Production Company core test #6	602 925	3 564 040	
189	24	30	23	1606n	2294e	Shell Oil Company #9 (Dogtown #4)	608 415	3 563 670	

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FFG#	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y
190	24	30	23	660s	660w	Shugart Federal 23 #1	607 700	3 562 740
192	24	30	27	336n	270e	Shell Oil Company #10 (Dogtown #)	607 425	3 562 425
198	24	31	5	330n	330e	USGS potash core test #13	613 800	3 568 860
199	24	31	6	1098n	2193e	Shell Oil Company #15	611 580	3 568 630
202	24	31	11	2531n	178e	Shell Oil Company #4 (Federal G-NM #4)	618 710	3 566 685
204	24	31	13	1980s	1980e	1-13 Federal	619 780	3 564 825
210	24	31	21	660s	660w	Poker Lake Unit #43	614 200	3 562 750
213	24	31	33	2310n	2313e	~~Ramley (?) #1~~ Ramsey #1 cmm	614 900	3 560 250
479	24	32	11	1980n	1980w	Federal Hanagan D-4	627 500	3 566 040
487	24	32	23	1650n	330w	Exxon A Federal No. 2	627 020	3 563 825
488	24	32	24	330n	330w	Bon Durant Federal No. 1	628 650	3 564 150
489	24	32	25	1980n	1980w	Federal "BM" #1	629 160	3 562 160
490	24	32	29	1980n	660w	#1 Payne	622 280	~~3 561 990~~ cmm Y:3 562 010
494	24	32	34	660s	1980w	Cotton Draw Unit #74	625 990	3 559 680
215	25	30	1	660n	660e	Poker Lake Unit #2	610 575	3 559 160
577	25	30	8	1980s	660w	Poker Lake State #3	602 860	3 556 530
584	25	30	10	2030n	2180e	Poker Lake #44	606 880	3 557 000
585	25	30	12	1980n	1980w	Shugart Federal No. 1	609 770	3 557 125
589	25	30	17	660s	660w	Poker Lake Unit #11A-7	602 860	3 554 200
600	25	30	35	1980n	660e	Marshall Federal #1	609 010	3 550 590
601	25	30	35	660s	660w	Richardson & Bass Federal No. 1	607 860	3 549 750
217	25	31	2	100n	1500w	Dog Town #2	617 700	3 559 350
219	25	31	10	1980n	1980e	Pauley & Harrison #2	616 635	3 557 160
220	25	31	12	660n	660w	Pauley & Harrison #1	619 075	3 557 590
221	25	31	15	780n	1230w	Pauley & Harrison PH-1	616 000	3 555 915
606	25	31	35	660n	1980e	Big Sinks Federal Unit #1	618 325	3 551 160
705	25	32	28	2310s	990w	J.D. Sena Jr.	624 070	3 552 135
706	25	32	28	2310s	1650w	J.D. Sena U.S.A. No. 1	624 270	3 552 135
707	25	32	29	1980n	330e	Cotton Draw Unit No. 58	623 670	3 552 425
708	25	32	29	330n	330e	Cotton Draw Unit No. 55	623 670	3 552 925
714	25	32	34	660n	660w	Federal Sunshine Royalty #1	625 610	3 551 260
715	25	32	34	660n	660e	Sunshine Royalties #1	626 850	3 551 250

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IDNum	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y
6122	22	30	9	1485s	650w	IMC #343	604170	3585500
6144	23	29	1	2763s	2964e	Duval #29	599825	3577780
6146	23	29	1	1320n	1320e	IMC I-263	600350	3578170
6145	23	29	1	528s	528w	IMC I-184	599300	3577130
6147	23	29	4	1255n	1374e	Arco #9	595500	3578180
6148	23	29	12	2600n	700e	Shell Oil Company #17 (Dogtown #	600550	3756200
6149	23	29	13	2100n	300e	Shell Oil Company #21 (Dogtown #	600700	3574700
6151	23	29	15	1160n	3276e	Duval #14	596540	3575000
6155	23	29	27	660s	1980w	Laguna Grande #2	596600	3570670
6156	23	29	28	1380s	990e	#1 Laguna Grande Unit	595680	3570850
6157	23	29	35	1900s	100e	A-29	599200	3569430
6158	23	29	36	1800s	1200e	A-31	600500	3569420
6161	23	30	2	101s	1169w	Duval #1	~~607330~~	~~3578600~~
6162	23	30	2	143n	112w	Duval D-31	~~608075~~	~~3577840~~
6163	23	30	2	2655n	2655e	Duval D-179	~~607670~~	~~3577075~~
6164	23	30	17	2505n	317w	Shell Oil Company #6 (Dogtown #	602450	3574600
6165	23	30	19	2244n	2096e	Duval #10	601815	3573060
6168	23	30	28	175s	232w	Duval #4	604185	3570620
6169	23	30	29	261n	261e	Shell Oil Company #7 (Dogtown #	604025	3572085
6170	23	30	30	215n	2300w	Shell Oil Company #20 (Dogtown #	601540	3572075
6171	23	30	31	2640n	1750e	Arco #24	600995	3569715
6172	23	30	32	1411n	2510e	Shell Oil Company #23 (Dogtown #	603370	3570110
6173	23	30	36	2150n	3090w	Leonard ?????? #1-S	609960	3570020
6177	24	29	19	480n	330w	Bun #1	591330	3563820
6179	24	29	29	1980s	660w	Ellis Federal 1-X	593075	3561330
6180	24	30	2	200s	200w	Shell Oil Company #16 (Dogtown #	607500	3567420
6181	24	30	5	1147n	406e	Shell Oil Company #11 (Dogtown #	604075	3568580
6182	24	30	6	1990n	2185w	Arco #8	601540	3568290
6183	24	30	9	2001n	2001e	Shell Oil Company #8 (Dogtown #3	605220	3566730
6184	24	30	11	316s	390w	Shell Oil Company #12 (Dogtown #	607615	3565780
6185	24	30	15	200n	200w	Shell Oil Company #13 (Dogtown #	605880	3565660
6186	24	30	16	150n	2590e	Shell Oil Company #24 (Dogtown #	605040	3565680
6188	24	30	20	100n	1320w	Southern Production Company cor	602925	3564040
6189	24	30	23	1606n	2294e	Shell Oil Company #9 (Dogtown #4	608415	3563670
6190	24	30	23	660s	660w	Shugart Federal 23 #1	607700	3562740

x:607 670 y:3577075
x:607 330 y:3578600
x:608 075 y:3577840
NM

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IDNum	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y
6192	24	30	27	336n	270e	Shell Oil Company #10 (Dogtown #	607425	3562425
6198	24	31	5	330n	330e	USGS potash core test #13	613800	3568860
6199	24	31	6	1098n	2193e	Shell Oil Company #15	611580	3568630
6202	24	31	11	2531n	178e	Shell Oil Company #4 (Federal G-N	618710	3566685
6204	24	31	13	1980s	1980e	1-13 Federal	619780	3564825
6210	24	31	21	660s	660w	Poker Lake Unit #43	614200	3562750
6213	24	31	33	2310n	2313e	~~Ramley (?) #1~~ Rumsey #1 (	614900	3560250
6479	24	32	11	1980n	1980w	Federal Hanagan D-4	627500	3566040
6487	24	32	23	1650n	330w	Exxon A Federal No. 2	627020	3563825
6488	24	32	24	330n	330w	Bon Durant Federal No. 1	628650	3564150
6489	24	32	25	1980n	1980w	Federal "BM" #1	629160	3562160
6490	24	32	29	1980n	660w	#1 Payne	622280	3562010
6494	24	32	34	660s	1980w	Cotton Draw Unit #74	625990	3559680
6215	25	30	1	660n	660e	Poker Lake Unit #2	610575	3559160
6577	25	30	8	1980s	660w	Poker Lake State #3	602860	3556530
6584	25	30	10	2030n	2180e	Poker Lake #44	606880	3557000
6585	25	30	12	1980n	1980w	Shugart Federal No. 1	609770	3557125
6589	25	30	17	660s	660w	Poker Lake Unit #11A-7	602860	3554200
6600	25	30	35	1980n	660e	Marshall Federal #1	609010	3550590
6601	25	30	35	660s	660w	Richardson & Bass Federal No. 1	607860	3549750
6217	25	31	2	100n	1500w	Dog Town #2	617700	3559350
6219	25	31	10	1980n	1980e	Pauley & Harrison #2	616635	3557160
6220	25	31	12	660n	660w	Pauley & Harrison #1	619075	3557590
6221	25	31	15	780n	1230w	Pauley & Harrison PH-1	616000	3555915
6606	25	31	35	660n	1980e	Big Sinks Federal Unit #1	618325	3551160
6705	25	32	28	2310s	990w	J.D. Sena Jr.	624070	3552135
6706	25	32	28	2310s	1650w	J.D. Sena U.S.A. No. 1	624270	3552135
6707	25	32	29	1980n	330e	Cotton Draw Unit No. 58	623670	3552425
6708	25	32	29	330n	330e	Cotton Draw Unit No. 55	623670	3552925
6714	25	32	34	660n	660w	Federal Sunshine Royalty #1	~~626850~~ 625610	~~3551250~~
6715	25	32	34	660n	660e	Sunshine Royalties #1	~~625610~~	~~3551250~~

CMM
x: 625610
Y: 3551250
x: 626850
Y: 3551250

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FFG.	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y
6122	22	30	9	1485s	650w	IMC #343	604170	3585500
6144	23	29	1	2763s	2964e	Duval #29	599825	3577780
6146	23	29	1	1320n	1320e	IMC I-263	600350	3578170
6145	23	29	1	528s	528w	IMC I-184	599300	3577130
6147	23	29	4	1255n	1374e	Arco #9	595500	3578180
6148	23	29	12	2600n	700e	Shell Oil Company #17	600550	~~3756200~~ 3576200
6149	23	29	13	2100n	300e	Shell Oil Company #21	600700	3574700
6151	23	29	15	1160n	3276e	Duval #14	596540	3575000
6155	23	29	27	660s	1980w	Laguna Grande #2	596600	3570670
6156	23	29	28	1380s	990e	#1 Laguna Grande Unit	595680	3570850
6157	23	29	35	1900s	100e	A-29	599200	3569430
6158	23	29	36	1800s	1200e	A-31	600500	3569420
6161	23	30	2	101s	1169w	Duval #1	607670	3577075
6162	23	30	2	143n	112w	Duval D-31	607330	3578600
6163	23	30	2	2655n	2655e	Duval D-179	608675	3577840
6164	23	30	17	2505n	317w	Shell Oil Company #6 ([	602450	3574600
6165	23	30	19	2244n	2096e	Duval #10	601815	3573060
6168	23	30	28	175s	232w	Duval #4	604185	3570620
6169	23	30	29	261n	261e	Shell Oil Company #7 ([	604025	3572085
6170	23	30	30	215n	2300w	Shell Oil Company #20	601540	3572075
6171	23	30	31	2640n	1750e	Arco #24	600995	3569715
6172	23	30	32	1411n	2510e	Shell Oil Company #23	603370	3570110
6173	23	30	36	2150n	3090w	Leonard #1-S	609960	3570020
6177	24	29	19	480n	330w	Bun #1	591330	3563820
6179	24	29	29	1980s	660w	Ellis Federal 1-X	593075	3561330
6180	24	30	2	200s	200w	Shell Oil Company #16	607500	3567420
6181	24	30	5	1147n	406e	Shell Oil Company #11	604075	3568580
6182	24	30	6	1990n	2185w	Arco #8	601540	3568290
6183	24	30	9	2001n	2001e	Shell Oil Company #8 ([	605220	3566730
6184	24	30	11	316s	390w	Shell Oil Company #12	607615	3565780
6185	24	30	15	200n	200w	Shell Oil Company #13	605880	3565660
6186	24	30	16	150n	2590e	Shell Oil Company #24	605040	3565680
6188	24	30	20	100n	1320w	Southern Production Co	602925	3564040
6190	24	30	23	1606n	2294e	Shell Oil Company #9 ([	608415	3563670
6189	24	30	23	660s	660w	Shugart Federal 23 #1	607700	3562740

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FFG.	twp	rge	sec	fnsl	fewl	Drillhole name	UTM X	UTM Y
6192	24	30	27	336n	270e	Shell Oil Company #10	607425	3562425
6198	24	31	5	330n	330e	USGS potash core test #	613800	3568860
6199	24	31	6	1098n	2193e	Shell Oil Company #15	611580	3568630
6202	24	31	11	2531n	178e	Shell Oil Company #4 (F	618710	3566685
6204	24	31	13	1980s	1980e	1-13 Federal	619780	3564825
6210	24	31	21	660s	660w	Poker Lake Unit #43	614200	3562750
6213	24	31	33	2310n	2313e	Ramsey #1	614900	3560250
6479	24	32	11	1980n	1980w	Federal Hanagan D-4	627500	3566040
6487	24	32	23	1650n	330w	Exxon A Federal No. 2	627020	3563825
6488	24	32	24	330n	330w	Bon Durant Federal No.	628650	3564150
6489	24	32	25	1980n	1980w	Federal "BM" #1	629160	3562160
6490	24	32	29	1980n	660w	#1 Payne	622280	3562010
6494	24	32	34	660s	1980w	Cotton Draw Unit #74	625990	3559680
6215	25	30	1	660n	660e	Poker Lake Unit #2	610575	3559160
6577	25	30	8	1980s	660w	Poker Lake State #3	602860	3556530
6584	25	30	10	2030n	2180e	Poker Lake #44	606880	3557000
6585	25	30	12	1980n	1980w	Shugart Federal No. 1	609770	3557125
6589	25	30	17	660s	660w	Poker Lake Unit #11A-7	602860	3554200
6600	25	30	35	1980n	660e	Marshall Federal #1	609010	3550590
6601	25	30	35	660s	660w	Richardson & Bass Fede	607860	3549750
6217	25	31	2	100n	1500w	Dog Town #2	617700	3559350
6219	25	31	10	1980n	1980e	Pauley & Harrison #2	616635	3557160
6220	25	31	12	660n	660w	Pauley & Harrison #1	619075	3557590
6221	25	31	15	780n	1230w	Pauley & Harrison PH-1	616000	3555915
6606	25	31	35	660n	1980e	Big Sinks Federal Unit #	618325	3551160
6705	25	32	28	2310s	990w	J.D. Sena Jr.	624070	3552135
6706	25	32	28	2310s	1650w	J.D. Sena U.S.A. No. 1	624270	3552135
6707	25	32	29	1980n	330e	Cotton Draw Unit No. 58	623670	3552425
6708	25	32	29	330n	330e	Cotton Draw Unit No. 55	623670	3552925
6715	25	32	34	660n	660w	Federal Sunshine Royalt	625610	3551250
6714	25	32	34	660n	660e	Sunshine Royalties #1	626850	3551250

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IDNum	DH_Name	StateX	StateY	Township	Range	Section	FNSL	FEWL	UTMX	UTMY
6122	IMC #343			22	30	9	1485s	650w	604170	3585500
6144	Duval #29			23	29	1	2763s	2964e	599825	3577780
6146	IMC I-263			23	29	1	1320n	1320e	600350	3578170
6145	IMC I-184			23	29	1	528s	528w	599300	3577130
6147	Arco #9			23	29	4	1255n	1374e	595500	3578180
6148	Shell Oil Company #17 (Dogtown #)			23	29	12	2600n	700e	600550	3576200
6149	Shell Oil Company #21 (Dogtown #1			23	29	13	2100n	300e	600700	3574700
6151	Duval #14			23	29	15	1160n	3276e	596540	3575000
6155	Laguna Grande #2			23	29	27	660s	1980w	596600	3570670
6156	#1 Laguna Grande Unit			23	29	28	1380s	990e	595680	3570850
6157	A-29			23	29	35	1900s	100e	599200	3569430
6158	A-31			23	29	36	1800s	1200e	600500	3569420
6161	Duval #1			23	30	2	101s	1169w	607670	3577075
6162	Duval D-31			23	30	2	143n	112w	607330	3578600
6163	Duval D-179			23	30	2	2655n	2655e	608675	3577840
6164	Shell Oil Company #6 (Dogtown #1)			23	30	17	2505n	317w	602450	3574600
6165	Duval #10			23	30	19	2244n	2096e	601815	3573060
6168	Duval #4			23	30	28	175s	232w	604185	3570620
6169	Shell Oil Company #7 (Dogtown #2)			23	30	29	261n	261e	604025	3572085
6170	Shell Oil Company #20 (Dogtown #1			23	30	30	215n	2300w	601540	3572075
6171	Arco #24			23	30	31	2640n	1750e	600995	3569715
6172	Shell Oil Company #23 (Dogtown #1			23	30	32	1411n	2510e	603370	3570110
6173	Leonard #1-S			23	30	36	2150n	3090w	609960	3570020
6177	Bun #1			24	29	19	480n	330w	591330	3563820
6179	Ellis Federal 1-X			24	29	29	1980s	660w	593075	3561330
6180	Shell Oil Company #16 (Dogtown #1			24	30	2	200s	200w	607500	3567420
6181	Shell Oil Company #11 (Dogtown #6			24	30	5	1147n	406e	604075	3568580
6182	Arco #8			24	30	6	1990n	2185w	601540	3568290
6183	Shell Oil Company #8 (Dogtown #3)			24	30	9	2001n	2001e	605220	3566730
6184	Shell Oil Company #12 (Dogtown #)			24	30	11	316s	390w	607615	3565780
6185	Shell Oil Company #13 (Dogtown #)			24	30	15	200n	200w	605880	3565660
6186	Shell Oil Company #24 (Dogtown #1			24	30	16	150n	2590e	605040	3565680
6188	Southern Production Company core			24	30	20	100n	1320w	602925	3564040
6190	Shell Oil Company #9 (Dogtown #4)			24	30	23	1606n	2294e	608415	3563670
6189	Shugart Federal 23 #1			24	30	23	660s	660w	607700	3562740

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IDNum	DH_Name	StateX	StateY	Township	Range	Section	FNSL	FEWL	UTMX	UTMY
6192	Shell Oil Company #10 (Dogtown #)			24	30	27	336n	270e	607425	3562425
6198	USGS potash core test #13			24	31	5	330n	330e	613800	3568860
6199	Shell Oil Company #15			24	31	6	1098n	2193e	611580	3568630
6202	Shell Oil Company #4 (Federal G-NM			24	31	11	2531n	178e	618710	3566685
6204	1-13 Federal			24	31	13	1980s	1980e	619780	3564825
6210	Poker Lake Unit #43			24	31	21	660s	660w	614200	3562750
6213	Ramsey #1			24	31	33	2310n	2313e	614900	3560250
6479	Federal Hanagan D-4			24	32	11	1980n	1980w	627500	3566040
6487	Exxon A Federal No. 2			24	32	23	1650n	330w	627020	3563825
6488	Bon Durant Federal No. 1			24	32	24	330n	330w	628650	3564150
6489	Federal "BM" #1			24	32	25	1980n	1980w	629160	3562160
6490	#1 Payne			24	32	29	1980n	660w	622280	3562010
6494	Cotton Draw Unit #74			24	32	34	660s	1980w	625990	3559680
6215	Poker Lake Unit #2			25	30	1	660n	660e	610575	3559160
6577	Poker Lake State #3			25	30	8	1980s	660w	602860	3556530
6584	Poker Lake #44			25	30	10	2030n	2180e	606880	3557000
6585	Shugart Federal No. 1			25	30	12	1980n	1980w	609770	3557125
6589	Poker Lake Unit #11A-7			25	30	17	660s	660w	602860	3554200
6600	Marshall Federal #1			25	30	35	1980n	660e	609010	3550590
6601	Richardson & Bass Federal No. 1			25	30	35	660s	660w	607860	3549750
6217	Dog Town #2			25	31	2	100n	1500w	617700	3559350
6219	Pauley & Harrison #2			25	31	10	1980n	1980e	616635	3557160
6220	Pauley & Harrison #1			25	31	12	660n	660w	619075	3557590
6221	Pauley & Harrison PH-1			25	31	15	780n	1230w	616000	3555915
6606	Big Sinks Federal Unit #1			25	31	35	660n	1980e	618325	3551160
~~6705~~	~~J.D. Sena Jr.~~			~~25~~	~~32~~	~~28~~	~~2310s~~	~~990w~~	~~624070~~	~~3552135~~ dups DWP 4/12/01
~~6706~~	~~J.D. Sena U.S.A. No. 1~~			~~25~~	~~32~~	~~28~~	~~2310s~~	~~1650w~~	~~624270~~	~~3552135~~ dups DWP
6707	Cotton Draw Unit No. 58			25	32	29	1980n	330e	623670	3552425
6708	Cotton Draw Unit No. 55			25	32	29	330n	330e	623670	3552925
6715	Federal Sunshine Royalty #1			25	32	34	660n	660w	625610	3551250
6714	Sunshine Royalties #1			25	32	34	660n	660e	626850	3551250

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UTM Coordinates from Corpscon for Selected Drillholes Compared to UTM Coordinates in Gonzales (1989)

Input File: Source Data from Gonzales (1989), Table 3-6

Drillhole name	State X	StateY
H-01	666500	497991
H-5c	677878	508198
H-7c	648766	475035
H-12	678079	477535

Output file from Corpscon

SOFTWARE: Corpscon for Windows 5.11.08
Horizontal Datum: UTM, NAD27
Horizontal Zone: 13
Horizontal Units: Meters

Drillhole name	UTM X	UTM Y
H-01	613455.71451	3581670.49190
H-5c	616903.65952	3584802.58362
H-7c	608095.03789	3574641.28770
H-12	617023.10812	3575458.69646

UTM Data from Gonzales (1989), Table 3-7

Drillhole name	UTM X	UTM Y
H-01	613423	3581684
H-5c	616903	3584802
H-7c	608095	3574640
H-12	617023	3575452

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Appendix D
List of Electronic Files Submitted

Information Only

The following electronic files have been submitted for Task 1:

Main report file: Task 1 Analysis Report for AP-088 revised.doc (Word 97)

Data source table: Task1 Source Data.xls (Excel 97)
(Separate worksheets for Source Table A and Source Table B)

Data source table: RustlerHalite.xls (Excel 97)
(includes data on position of halite relative to Culebra Dolomite Member)

Large format map files: Drillhole ID Numbers.pdf (Acrobat 3.0)
Culebra Structure.pdf (Acrobat 3.0)
Salado Dissolution and CulVT Thickness.pdf (Acrobat 3.0)
Rustler Halite Margins.pdf (Acrobat 3.0)

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Appendix E
User's Instructions for Corpscon for Windows 5.11.08

Information Only

Corpscon
Operating Instructions

Information Only

Corpscon

Version 5.x
Technical Documentation and
Operating Instructions

September 1997

U.S. Army Corps of Engineers
Topographic Engineering Center
Alexandria, Virginia 22315-3864

Information Only

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Internal Software Documentation
and Report

September 1997

Corpscon

Version 5.x

Technical Documentation
and
Operating Instructions

Geodetic Applications Division
Topographic Applications Laboratory
U.S. Army Topographic Engineering Center
7701 Telegraph Road
Alexandria, Virginia 22315-3864

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{ TC 1.0 General }{ TC }1.0 GENERAL

{ TC }1.1 Background

• The National Geodetic Survey has developed three programs called Nadcon (North American Datum Conversion), Vertcon (Vertical Conversion) and Geoid96. Nadcon provides consistent results when converting to and from the North American Datum of 1983 (NAD83) and the North American Vertical Datum of 1988 (NAVD88). Nadcon converts coordinates between NAD83 and the following datums; NAD27, Old Hawaiian Datum, Puerto Rico Datum, St. George Island (Alaska) Datum, St. Paul Island (Alaska) Datum and St. Lawrence Island (Alaska) Datum. For organizational purposes, the latter six datums are referred to as NAD27 within the program. Vertcon converts orthometric heights between National Geodetic Vertical Datum of 1929 (NGVD29) and NAVD88. Geoid96 calculates the separation between the Geoid and the Geodetic Reference System of 1980 (GRS80) ellipsoid. Nadcon, Vertcon, and Geoid96 work exclusively in geographical coordinates (Latitude/Longitude). For information on the accuracies of Vertcon refer to Appendix A. For more information on the accuracies of Geoid96 refer to Appendix B.

• The U.S. Army Topographic Engineering Center (TEC) created a more comprehensive program called Corpscon (Corps Convert), which is based on Nadcon, Vertcon and Geoid96. In addition to transformations between NAD83 and NAD27 geographical coordinates, Corpscon also converts between State Plane Coordinates Systems (SPCS), Universal Transverse Mercator (UTM) and geographical coordinates; thus eliminating several steps in the total process of converting between SPCS27, SPCS83, UTM27, and UTM83. Inputs can be in either geographic or SPCS/UTM coordinates (SPCS27 X and Y or SPCS83 Northing and Easting). This program can also be used to convert between state plane, geographic, and UTM coordinates on the same datum. Corpscon will convert orthometric and ellipsoidal heights in Geographic, State Plane and UTM coordinate systems.

• Corpscon allows conversions based on U.S. Survey and International Feet. As of 1997, 19 states have specified, by statute, units of measure for grid coordinates as follows:

U.S. Survey Foot - California, Colorado, Connecticut, Idaho, Indiana, Kentucky, Maryland, Massachusetts, Mississippi, New Mexico, New York, North Carolina, Oklahoma, Pennsylvania, Tennessee, Texas, Washington and Wisconsin.

International Survey Foot - Arizona, Michigan, Montana, North Dakota, Oregon, South Carolina and Utah.

• Corpscon 5.0 includes conversions based on High Accuracy Regional Networks (HARN's).

• The Federal Geodetic Control Subcommittee (FGCS) has adopted NAD83 as the official

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horizontal datum for U.S. surveying and mapping activities performed or financed by the Federal Government (Federal Register / Vol. 54, No. 113, June 14, 1989). The FGCS also stated that Nadcon will be the standard conversion method for all mathematical transformations between NAD83 and NAD27. For further information reference Engineer Technical Letter No. 1110-1-147, Engineering and Design Conversion to North American Datum of 1983 dated March 5, 1990.

• FGCS has affirmed that NAVD88 shall be the official vertical reference datum for the United States (Federal Register / Vol. 58, No. 120, June 24, 1993). For further information reference Engineer Technical Letter No. 1110-1-152, Conversion to the North American Vertical Datum of 1988, dated July 31, 1994.

{ TC }1.2 Coverage

The current version performs NAD27/NAD83 and NAVD88/GRS80 conversions for the continental U.S. (CONUS), including the 200 mile commercial zone, Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands. Current areas of coverage for HARNs are Alabama, Arizona, California, Colorado, Florida, Idaho-Montana, Kentucky, Louisiana, Maine, Maryland-Delaware, Mississippi, Nebraska, New England (Connecticut, Massachusetts, New Hampshire, Vermont), New Mexico, Oklahoma, Puerto Rico-Virgin Islands, Tennessee, Texas, Virginia, Washington-Oregon, Wisconsin and Wyoming. The current version performs NGVD29/NAVD88 conversions for the continental U.S. only.

1.3 Accuracy

Nadcon and Vertcon transformations between datums are based on a model of over 250,000 common stations. Therefore, conversions are approximate and accuracy can vary depending on location and proximity to common stations.

Nadcon 2.1
The accuracy of the transformations should be viewed with some caution. At the 67 percent confidence level, this method introduces approximately 0.15 meter uncertainty within the conterminous United States, 0.50 meter uncertainty within Alaska, 0.20 meter uncertainty within Hawaii and 0.05 meter uncertainty within Puerto Rico and the U.S. Virgin Islands. In areas of sparse geodetic data coverage, Nadcon may yield less accurate results, but seldom in excess of 1.0 meter. Transformations between NAD83 and states/regions with High Accuracy Reference Networks (HARNs) introduce approximately 0.05 meter uncertainty. Transformations between old datums (NAD27, Old Hawaiian, Puerto Rico, etc.) and HARN could combine uncertainties (i.e. NAD27 to HARN equals 0.15m + 0.05m = 0.20m). In near offshore regions, results will be less accurate, but seldom in excess of 5.0 meters. Farther offshore NAD27 undefined. Therefore, the Nadcon computed transformations are extrapolations and no accuracy can be stated.

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Vertcon 2.0

The Vertcon 2.0 model was computed on May 5, 1994 using 381,833 datum difference values. A key part of the computation procedure was the development of the predictable, physical components of the differences between the NAVD 88 and NGVD 29 datums. This included models of refraction effects on geodetic leveling, and gravity and elevation influences on the new NAVD 88 datum. Tests of the predictive capability of the physical model show a 2.0 cm RMS agreement at our 381,833 data points. For this reason, the Vertcon 2.0 model can be considered accurate at the 2 cm (one sigma) level. Since 381,833 data values were used to develop the corrections to the physical model, Vertcon 2.0 will display even better overall accuracy than that displayed by the uncorrected physical model. This higher accuracy will be particularly noticeable in the eastern United States.

2.0 SOURCE OF PROGRAM AND ASSISTANCE

To obtain copies of the program, contact:

U.S. Army Topographic Engineering Center
ATTN: CETEC-
7701 Telegraph Road
Alexandria, Virginia 22315-3864
(703) 428-6766

3.0 HARDWARE AND SOFTWARE REQUIREMENTS

A 80486 (or higher) PC with MS-Windows 3.1, MS-Windows95 or MS-WindowsNT and 20MB of hard disk space is required. The CONFIG.SYS file must have FILES set to 25.

4.0 INSTALLATION PROCEDURES

To install the Corpscon program from diskette, perform the following steps:

1. Insert Distribution Disk #1 in the a: drive of the computer.
2. For Windows95, select *Run* from the *Start* menu. For Windows 3.1, go to the Program Manager group box and select *File* and then *Run*. A Run window should appear.
3. Enter '*a:setup*' in the Command Line item of the Run window. This should activate the Corpscon installation window.
4. Follow the directions on screen to install the program.

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To install the Corpscon program from CD, perform the following steps:

1. Insert the CD in the computer.
2. For Windows95, select *Run* from the *Start* menu. For Windows 3.1, go to the Program Manager group box and select *File* and then *Run*. A Run window should appear.
3. Enter '*d:\corpscon\setup*' in the Command Line item of the Run window. This should activate the Corpscon installation window. If the CD-ROM is on a drive other than the 'd:' drive, replace the 'd:' with the appropriate drive letter.
4. Follow the directions on screen to install the program.

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5.0 PROGRAM AND DATA FILES

Upon installation, the following files should be located in the destination directory (c:\Corpscon if the default installation was used):

corpswin.exe
corpswin.cfg
utms.hlp
geoareas.lst
corpswin.wri
geoid96.txt
vertcon.txt
conus.las
conus.los
hawaii.las
hawaii.los
prvi.las
prvi.los
vertcone.94
vertconc.94
vertconw.94
geoid96ne.geo
geoid96nc.geo
geoid96nw.geo
geoid96se.geo
geoid96sc.geo
geoid96sw.geo
haw96.geo
prvi96.geo

alhpgn.las
alhpgn.los

azhpgn.las
azhpgn.los
cahpgn.las
cahpgn.los
cohpgn.las
cohpgn.los
emhpgn.las
emhpgn.los
ethpgn.las
ethpgn.los
flhpgn.las
flhpgn.los
kyhpgn.las
kyhpgn.los
lahpgn.las
lahpgn.los
mehpgn.las
mehpgn.los
mdhpgn.las
mdhpgn.los
mshpgn.las
mshpgn.los

nehpgn.las
nehpgn.los

nmhpgn.las
nmhpgn.los
okhpgn.las
okhpgn.los
pvhpgn.las
pvhpgn.los
tnhpgn.las
tnhpgn.los
vahpgn.las
vahpgn.los
wihpgn.las
wihpgn.los
wmhpgn.las
wmhpgn.los
wohpgn.las
wohpgn.los

If the Alaska Data Files were installed, the following files should be copied to the destination directory (c:\corpscon if the default installation was used):

alaska.las
alaska.los
stlrnc.las
stlrnc.los

stgeorge.las
stgeorge.los
stpaul.las
stpaul.los

geo96an.geo
geo96as.geo

5.1 .LAS/.LOS, .94, and .GEO Files

Files with .las and .los extensions are Nadcon data files. These files are used for

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NAD27/NAD83/HPGN conversions. Files with .94 extensions are Vertcon data files. These files are used for NGVD29/NAVD88 conversions. File with .geo extensions are Geoid96 files. These files are used for GRS80/NAVD88 conversions.

5.2 Corpscon.CFG File

When Corpscon is run, the corpscon.cfg file will be updated. This file will hold all of the configuration information for the most recent conversion. Information maintained includes input and output datums, zones, units, and output file names.

5.3 Corpscon.INI File

The Corpscon.ini file will be created in the Windows directory by the installation program. The Corpscon.ini file contains several variables required for program execution. Each variable holds a directory name as specified below.

programfiles - directory for all program files (corpswin.exe & utms.hlp)
nadconfiles - directory for all Nadcon (.las & .los) files
vertconfiles - directory for all Vertcon (.94) files
geoid9396files - directory for all Geoid96 (.geo) files
tempfiles - directory where temporary files are created
configfiles - directory where the configuration file (corpswin.cfg) is stored

The Corpscon.ini file also contains descriptions and base filenames of HARN areas. This file may be modified to include new or updated HARN files. The format of entries in this file is:

description=basefilename

For example, the files used to cover Maryland and Delaware are mdhpgn.las and mdhpgn.los. The corresponding entry in the Corpscon.ini file is:

Maryland-Delaware=mdhpgn

The .las and .los file extensions should NOT be included in the filename. The Corpscon.ini file may be modified by hand using any text editor, or entries may be added by using the Utilities/Add New HPGN File option described in Section 6.5.5.

5.4 Geoareas.lst File

The geoareas.lst file contains a list of all Geoid96 data files. This file must be present or Corpscon will default to using Geoid93 data files.

6.0 OPERATING INSTRUCTIONS

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Execute the Corpscon program throught the Start Menu for Windows95 or through the Corpscon icon for Windows 3.1. This should open the Corpscon Main Window. The Corpscon Window consists of four items: the Main Menu Bar, the Input Format information box, the Output Format information box, and the Send Data information box. All user interaction is performed through the use of the main menu bar. The information boxes are included for reference purposes only.

The basic procedure for performing a conversion is:

1. Specify input data information using the Input Data Format menu item.
2. Specify output data information using the Output Data Format menu item.
3. Specify the devices/files to which the data should be sent using the Send Data menu item.
4. Perform the conversion using the Convert menu item.

The main menu bar consists of six menu items: Convert, Input Format, Output Format, Send Data, Utilities, and Help. Each menu item will be explained below.

6.1 Convert

The convert menu item has three sub-items: Single Point (Manual Input), Corpscon Batch File, and User Defined Input File.

6.1.1 Convert/Single Point

The single point sub-item is used to convert a single data point. When this item is selected, a window will appear prompting the user to input relevant information. For grid coordinate conversions, the user must enter the Northing and Easting or X and Y values. For geographic conversions, the user will need to enter the latitude and longitude. If vertical conversions are being performed, the user must also enter an elevation value. An optional point name may be entered. The user should enter in the appropriate information and press the OK button to perform the conversion. If data is to be sent to an output and/or printer file, other windows will appear which will allow the specification of the names of these output files. If data is to be sent to an Output Window, the results of the conversion will appear in a separate window.

6.1.2 Convert/Corpscon Batch File

The Corpscon Batch File sub-item is used to convert files, which are in the standard Corpscon Batch File Format. Files in this format may be created by using the Utilities/Build New Corpscon Batch File (section 6.5.1) menu item. The details of this file format are included below.

When this sub-item is selected, a window will appear prompting the user to select the name of the input Corpscon Batch File. The user should select an input filename and press the OK button to perform the conversion. If data is to be sent to an output and/or printer file, other windows will appear which will allow the specification of the names of these output files. If data is to be sent to an Output Window, the results of the conversion will appear in a separate window.

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6.1.3 Corpscon Batch File Format

A Corpscon Batch File is an ASCII text file containing three or four comma-delimited fields. For geographic coordinates the fields are:

1. Point Name
2. Latitude
3. Longitude
4. Elevation (optional)

Latitude and longitude values may be in decimal degrees, degrees-decimal minutes, or degrees-minutes-decimal seconds. Longitude values have a positive west sign convention. Degree, minute, and second values must be separated by a space within the latitude or longitude field. The point name is not required, but a ',' must appear before the latitude value in order to be accepted as a valid line. The fourth field is required only if vertical conversions are to be performed. Below are some examples of valid lines for geographic coordinates:

Point 1, 38.014135524, 77.253656438, 20.2
Second, 35 25.334554, 78 10.2, 100.33452
, 33 20, 77 40 20.000, 0
Four, 39 1 14.93945, 76 23 15.85347, 15.6778

For grid coordinates, the fields are:

1. Point Name
2. Easting or X value
3. Northing or Y value
4. Elevation (optional)

Again, the fourth field is required only if vertical conversions are to be performed. Below are some examples of valid lines for grid coordinates:

Point A, 500000.0, 2600000.0, 1238.4566
, 500010, 2600400.264, 10.66
PTC, 512353.23523,2600234.23453, 100.6

Lines beginning with a ';' or '#' characters in Corpscon Batch Files are interpreted as comment lines. No conversion of data will be performed for comment lines.

6.1.4 Convert/User Defined Input File

The User Defined Input File sub-item is used to convert files in a format which is specified by

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the user. These files may contain up to six fields and may be comma or space delimited. When this option is selected, a window will appear prompting the user to specify the format of the input file. At a minimum, the type of data each field will contain and the delimiter of fields (comma or space) in the data file must be specified. If the input file contains geographic coordinates, the format of these coordinates must also be specified. Geographic coordinates may be in decimal degrees, degrees-decimal minutes or degrees-minutes-decimal seconds. The user should specify the format of the input file and press the OK button to continue. The User Defined File window and examples of its use are included below.

After specification of the input file format, a window will appear which will allow entry the input data file name. The user should enter the name and press the OK button to continue.

If data is to be sent to an output file, another User Defined File window will appear which allows specification of the format of the output file. The output file may have a different format than that of the input file. The user should specify the format of the output file and press the OK button to continue.

After specification of the output file format, a window will appear which will allow entry of the output data file name. The user should enter the name and press the OK button to perform the conversion. If data is to be sent to a printer file, another window will appear which will allow specification of the name of the printer file. If data is to be sent to an Output Window, the results of the conversion will appear in a separate window.

6.1.5 User Defined File Dialog Box

The User Defined File dialog box consists of two blocks of information: the field specifications and other file information.

The six fields that a user defined file may have are Point Name, Northing/Y/Latitude, Easting/X/Longitude, Elevation, Carry Field 1, and Carry Field 2. The Carry Fields act as place-holders of extra information which may be included in the file but is not necessary for the conversion. These carry fields can be included in an output file.

The field delimiter of the file must also be specified. This should be done by selecting commas or spaces in the Delimiter drop-down box.

If the input file contains geographic coordinate information, the coordinate format must also be specified in the Degree Format drop down box. Valid formats are decimal degrees, degrees-decimal minutes or degrees-minutes-decimal seconds. Geographic coordinates that are in degrees-decimal minutes or degrees-minutes-decimal seconds must have a space between the degree-minute and minute-second values in the input file.

If the user-defined file is to be an output file, header information may be included in the output.

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Header information will contain data on the output datums, data/time, and company/project names. These lines will have a ';' as their leading character which indicates a comment.

6.2 Input/Output Format Menu Items

Input/Output Format menu items allow the user to select Geographic, UTM, or State Plane coordinates on NAD27, NAD83, or HPGN. If Geographic coordinates are selected, a window will appear which allows the user to specify the vertical datum (NGVD29, NAVD88 or GRS80) and units.

If UTM coordinates are selected a window will appear which prompts the user to input the UTM zone, horizontal units, vertical datum (if any) and vertical units.

If State Plane coordinates are selected, a window will appear which prompts the user to input the State Plane zone, horizontal units, vertical datum (if any) and vertical units.

If a HPGN conversion is selected a second dialog box will appear prompting the user to selected the desired area for the HPGN conversion.

A check will appear next to the currently selected format.

6.3 Send Data

The send data menu items allow the user to specify where the output data should be sent. Data may be sent to an Output Window, Output File, Printer File or to the Printer. Data may be sent to more than one device or file. A check will appear next to the sub-item that device or item is to receive output data.

6.4 Utilities

The Utilities menu item has the following sub-items: Build Corpscon Batch File, Append Existing Corpscon Batch File, View Nadcon/Vertcon/Geoid96 File Status, Degree Conversion and Preferences.

6.4.1 Build Corpscon Batch File

This sub-item allows the user to create input files in the Corpscon Batch File Format explained in section 6.2.3 above. The user may build geographic or grid files which may or may not contain elevation values.

6.4.2 Append Existing Batch File

This sub-item allows the user to add points to an existing Corpscon Batch File.

6.4.3 View Nadcon/Vertcon/Geoid93/96 File Status

Corpscon requires that several data files be located and opened successfully in order to perform NAD27/NAD83 and NGVD29/NAVD88/GRS80 conversions. This sub-item allows

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the user to determine which data files have been opened successfully.

6.4.4 Degree Conversion

This tool allows the user to input a degree value in decimal degrees, degrees decimal minutes, or degrees minutes decimal seconds. The value is then displayed in an output window in decimal degrees, degrees-decimal minutes, and degrees-minutes-decimal seconds.

6.4.5 Add New HPGN File

This tool allows the user to add new or updated HPGN files to the program. The user should enter the area description and the base filename. The base filename should NOT include .las or .los extensions.

6.4.6 Preferences

The Preferences dialog box allows specification of a Company and Project name. It also allows specification of the Nadcon, Vertcon, and Geoid96 files directories. Grid coordinate entry and display may also be set here. A Northing-Easting or X-Y display may be selected.

6.5 Help

The Help menu item has the following sub-items: UTM Zones, and About The UTM Zones sub-item will display information about UTM zones. A diagram displaying approximate UTM zones for the continental U.S. is included. The About sub-item will display information about the program including version number.

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Appendix A

Vertcon Information

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The following is an excerpt from the Vertcon, Version 2.0, README file.

The Vertcon 2.0 Model

The Vertcon 2.0 model was computed on May 5, 1994 using 381,833 datum difference values. A key part of the computation procedure was the development of the predictable, physical components of the differences between the NAVD 88 and NGVD 29 datums. This included models of refraction effects on geodetic leveling, and gravity and elevation influences on the new NAVD 88 datum. Tests of the predictive capability of the physical model show a 2.0 cm RMS agreement at our 381,833 data points. For this reason, the Vertcon 2.0 model can be considered accurate at the 2 cm (one sigma) level. Since 381,833 data values were used to develop the corrections to the physical model, Vertcon 2.0 will display even better overall accuracy than that displayed by the uncorrected physical model. This higher accuracy will be particularly noticeable in the eastern United States.

Using Vertcon 2.0

It should be emphasized that Vertcon 2.0 is a datum transformation model, and can not maintain the full vertical control accuracy of geodetic leveling. Ideally, one should process level data using the latest reduction software and adjust it to established NAVD 88 control. However, Vertcon 2.0 accuracy is suitable for a variety of mapping and charting purposes.

The Vertcon 2.0 model expresses datum differences between NAVD 88 and NGVD 29 due to removal of distortions in the level data, as well as due to the physical differences in the height systems. In some rare cases, these local NGVD 29 distortions could be 20 cm or more. If both ends of your old vertical survey were tied to one of these "problem" lines, then the datum difference of the problem line is appropriate to use to transform the survey data. If both ends of a vertical survey are tied to "undistorted lines", then it is appropriate to use a slightly distant point to compute the transformation, no matter how close your survey data may approach a given problem line. The possible presence of a problem NGVD 29 line in the vicinity of your survey will become evident if dramatically different datum transformation values are computed within a small area.

It must also be emphasized that Vertcon 2.0 is not to be considered reliable beyond the boundaries of the lower 48 United States. The Vertcon program will interpolate values in Canada, Mexico, or in the ocean, due to the grid structure of the model. Those values do not contain important model components present in the conterminous U.S. model. Future versions of Vertcon may be extended into neighboring countries.

The Defense Mapping Agency

The Defense Mapping Agency (DMA) has been of immense help in this endeavor. DMA has provided a major portion of the NGS land gravity data set. DMA has also been instrumental in the creation of the various 30" elevation grids in existence. Although the work of the DMA generally precludes public recognition, their cooperation in this work is gratefully

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acknowledged.

Other Future Plans:

A continuing development effort is underway to improve Vertcon results. NGVD 29 normal orthometric heights are being analyzed for localized monument and/or crustal motion effects, for inconsistent adjustments, and other effects. Computed height differences that are significantly influenced by such effects will be flagged and rated for reliability in future versions.

For More Information

For Products Available From the National Geodetic Survey:

National Geodetic Information Center
N/NGS12, SSMC3-9450
National Geodetic Survey, NOAA
1315 East-West Highway
Silver Spring, MD 20910-3282
Telephone: 301-713-3242

For Information on Vertcon 2.0, and Future Research:

David B. Zilkoski
Spatial Reference Systems Division
N/NGS2, SSMC3-8752
1315 East-West Highway
Silver Spring, MD 20910-3282
Telephone: 301-713-3191
Fax: 301-713-4324
Internet: daveg@ngs.noaa.gov

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Appendix B

Geoid96 Information

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The following is an excerpt from the GEOID96, Version 3.00, README file.

The GEOID96 Model

The GEOID96 model was computed on October 1, 1996 using over 1.8 million terrestrial and marine gravity values. The method of computation uses a Fast Fourier Transform (FFT) technique to compute the detailed geoid structure, which is then combined with an underlying EGM96 geopotential model. The result is a gravimetric geoid height grid with a 2' X 2' spacing in latitude and longitude (2' x 4' in Alaska), referred to the Geodetic Reference System 1980 (GRS 80) normal ellipsoid in an International Terrestrial Reference System 1994 (ITRF94) frame. Then, by means of NAD 83 GPS ellipsoidal heights on NAVD 88 benchmark data, plus known relationships between NAD 83 and the ITRF94 reference frames, a conversion is applied to generate the final GEOID96 geoid model. This conversion causes the GEOID96 model to be biased relative to a geocentric ellipsoid; but, this bias is deliberate. The GEOID96 model was developed to support direct conversion between NAD 83 GPS ellipsoidal heights a nd NAVD 88 orthometric heights.

When comparing the GEOID96 model with GPS ellipsoidal heights in the NAD 83 reference frame and leveling in the NAVD 88 datum, it is seen that GEOID96 has roughly a 3-cm accuracy (one sigma) in the regions of GPS benchmark coverage. In those states with sparse (150km+) GPS benchmark coverage, less point accuracy may be evident; but relative accuracy at about a 1 to 2 part-per-million level, or better, should still be obtained. For users with less stringent accuracy requirements, simple height conversions with GEOID96 in the conterminous United States can be sufficient. For users with more stringent accuracy requirements, please see the section entitled "Deriving Orthometric Heights From GPS", later in this document. Users should be aware that GPS ellipsoid height error, by itself, can be significantly greater than error in geoid height differences.

States with Sparse GPS Benchmark Coverage

As of the date of computation of GEOID96, the states with sparse GPS benchmark coverage are: Arkansas, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, North Dakota, South Dakota, and West Virginia. This does not mean that the GEOID96 model can not be used in these states. It does mean that users may not see the same absolute accuracy when compared to other parts of the United States with denser GPS benchmark coverage. As stated above, relative accuracy may reach 1-2 PPM. Even so, the major components of the datum relationships between NAD 83 and NAVD 88 in all of the lower 48 states have been incorporated into the GEOID96 geoid model. As a rule, one can expect better

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results with GEOID96, relative to GEOID93, in any part of the United States.

Alaska, Hawaii, Puerto Rico and the Virgin Islands

It must be emphasized that the GEOID96 models in Alaska, Hawaii, Puerto Rico, and the Virgin Islands were NOT, repeat, NOT computed by incorporating a conversion surface based on GPS benchmarks. This was due to a shortage of reliable NAD 83 GPS ellipsoidal heights on NAVD 88 benchmarks in these regions. The GEOID96 geoid models provided in these areas are relative to a geocentric, GRS80 ellipsoid; as were earlier GEOID93 and GEOID90 models. For this reason, users should refer to the section entitled "Deriving Orthometric Heights From GPS", later in this document.

Due to poorer data coverage, error estimates for GEOID96 in these regions are larger. Long-wavelength errors may be as large as 4-5 parts-per-million in some areas. Particular care must be used in computing heights in the tectonically active areas in southern Alaska. Crustal motion may exceed 1 meter even after accounting for the shift of the 1964 Prince William Sound Earthquake.

The National Imagery and Mapping Agency

The National Imagery and Mapping Agency (NIMA), which incorporates the former Defense Mapping Agency (DMA), has been of immense help in this endeavor. NIMA has provided a major portion of the NGS land gravity data set. NIMA has also been instrumental in the creation of the various 30" and 3" elevation grids in existence. And, NIMA was a partner in the joint project to compute the new global geopotential model, EGM96. Although the work of the NIMA generally precludes public recognition, their cooperation is gratefully acknowledged.

GSFC/NIMA Geopotential Model, EGM96

The Goddard Space Flight Center (GSFC) and the National Imagery and Mapping Agency (NIMA) have been engaged in a joint project to compute an improved global spherical harmonic model of the Earth's geopotential. This model incorporates the latest satellite tracking data, as well as altimeter data from TOPEX/Poseidon, ERS-1, and the Geosat Geodetic Mission. EGM96 also incorporates new surface and marine gravity data covering the globe, including the former Soviet Union.

EGM96 is a global geopotential model expressed as spherical harmonic

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coefficients complete to degree and order 360. Therefore, the shortest wavelength this model can exhibit is one degree, and its resolution is one-half degree (about 50 km). Although this model does not reproduce geoid structure at very fine resolution, it is global. We thank the many members of the project team for making this model available.

Deriving Orthometric Heights From GPS

One key problem is deciding which orthometric height datum to use. NGVD 29 is not a sea-level datum, and the heights are not true orthometric heights. The datum of NAVD 88 is selected to maintain reasonable conformance with existing height datums, and its Helmert heights are good approximations of true orthometric heights. And, while differential ellipsoidal heights obtained from GPS are precise, they are often expressed in the NAD 83 datum, which is not exactly geocentric. In addition, GEOID96 rests upon an underlying EGM96 global geopotential model, and EGM96 does possess some error of commission.

This leads to a warning:

Do not expect the difference of a GPS ellipsoidal height at a point and the associated GEOID96 height to exactly match the vertical datum you need. The results will be close when converting NAD 83 GPS ellipsoidal heights into NAVD 88 elevations; but, maybe not accurate enough for your requirement.

However, one can combine the precision of differential carrier phase GPS with the precision of GEOID96 height differences, to approach that of leveling.

Include at least one existing benchmark in your GPS survey (preferably many benchmarks). The difference between the published elevation(s) and the height obtained from differencing your adopted GPS ellipsoidal height and the GEOID96 model, could be considered a "local orthometric height datum correction." If you are surveying an extensive area (100+ km), and you occupy a lot of benchmarks, then you might detect a trend in the corrections up to a one part-per-million level. This may be error in the GEOID96 model.

We do not currently consider geoid-corrected GPS orthometric heights as a substitute for geodetic leveling in meeting the Federal Geodetic Control Subcommittee(FGCS) standards for vertical control networks. Studies are underway, and many less stringent requirements can be satisfied by geoid modeling. Widespread success has been achieved with the preceding models, GEOID93 and GEOID90.

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Future Plans

A research effort is underway to improve geoid height estimates in the future, perhaps at the 1-cm accuracy level. One important direction is integrating gravity data with GPS and geodetic leveling measurements, and the study of error in GPS ellipsoid heights and in the NAVD88 vertical datum. It is likely that this research, in conjunction with the completion of the state upgrade GPS surveys, will yield a significant improvement to our geoid model in 1999.

For More Information

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The following is an excerpt from the GEOID96, Version 3.00, README file.

The GEOID96 Model

The GEOID96 model was computed on October 1, 1996 using over 1.8 million terrestrial and marine gravity values. The method of computation uses a Fast Fourier Transform (FFT) technique to compute the detailed geoid structure, which is then combined with an underlying EGM96 geopotential model. The result is a gravimetric geoid height grid with a 2' X 2' spacing in latitude and longitude (2' x 4' in Alaska), referred to the Geodetic Reference System 1980 (GRS 80) normal ellipsoid in an International Terrestrial Reference System 1994 (ITRF94) frame. Then, by means of NAD 83 GPS ellipsoidal heights on NAVD 88 benchmark data, plus known relationships between NAD 83 and the ITRF94 reference frames, a conversion is applied to generate the final GEOID96 geoid model. This conversion causes the GEOID96 model to be biased relative to a geocentric ellipsoid; but, this bias is deliberate. The GEOID96 model was developed to support direct conversion between NAD 83 GPS ellipsoidal heights and NAVD 88 orthometric heights.

When comparing the GEOID96 model with GPS ellipsoidal heights in the NAD 83 reference frame and leveling in the NAVD 88 datum, it is seen that GEOID96 has roughly a 3-cm accuracy (one sigma) in the regions of GPS benchmark coverage. In those states with sparse (150km+) GPS benchmark coverage, less point accuracy may be evident; but relative accuracy at about a 1 to 2 part-per-million level, or better, should still be obtained. For users with less stringent accuracy requirements, simple height conversions with GEOID96 in the conterminous United States can be sufficient. For users with more stringent accuracy

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requiements,
please see the section entitled "Deriving Orthometric Heights From GPS", later
in this document. Users should be aware that GPS ellipsoid height error, by
itself, can be significantly greater than error in geoid height differences.

States with Sparse GPS Benchmark Coverage

As of the date of computation of GEOID96, the states with sparse GPS
benchmark coverage are: Arkansas, Illinois, Indiana, Iowa, Kansas, Minnesota,
Missouri, North Dakota, South Dakota, and West Virginia. This does not mean
that the GEOID96 model can not be used in these states. It does mean that
users may not see the same absolute accuracy when compared to other parts of the
United States with denser GPS benchmark coverage. As stated above, relative
accuracy may reach 1-2 PPM. Even so, the major components of the datum
relationships between NAD 83 and NAVD 88 in all of the lower 48 states have been
incorporated into the GEOID96 geoid model. As a rule, one can expect better
results with GEOID96, relative to GEOID93, in any part of the United States.

Alaska, Hawaii, Puerto Rico and the Virgin Islands

It must be emphasized that the GEOID96 models in Alaska, Hawaii, Puerto
Rico, and the Virgin Islands were NOT, repeat, NOT computed by incorporating
a conversion surface based on GPS benchmarks. This was due to a shortage of
reliable NAD 83 GPS ellipsoidal heights on NAVD 88 benchmarks in these regions.
The GEOID96 geoid models provided in these areas are relative to a geocentric,
GRS80 ellipsoid; as were earlier GEOID93 and GEOID90 models. For this reason,
users should refer to the section entitled "Deriving Orthometric Heights From

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GPS", later in this document.

Due to poorer data coverage, error estimates for GEOID96 in these regions are larger. Long-wavelength errors may be as large as 4-5 parts-per-million in some areas. Particular care must be used in computing heights in the tectonically active areas in southern Alaska. Crustal motion may exceed 1 meter even after accounting for the shift of the 1964 Prince William Sound Earthquake.

The National Imagery and Mapping Agency

The National Imagery and Mapping Agency (NIMA), which incorporates the former Defense Mapping Agency (DMA), has been of immense help in this endeavor. NIMA has provided a major portion of the NGS land gravity data set. NIMA has also been instrumental in the creation of the various 30" and 3" elevation grids in existence. And, NIMA was a partner in the joint project to compute the new global geopotential model, EGM96. Although the work of the NIMA generally precludes public recognition, their cooperation is gratefully acknowledged.

GSFC/NIMA Geopotential Model, EGM96

The Goddard Space Flight Center (GSFC) and the National Imagery and Mapping Agency (NIMA) have been engaged in a joint project to compute an improved global spherical harmonic model of the Earth's geopotential. This model incorporates the latest satellite tracking data, as well as altimeter data from TOPEX/Poseidon, ERS-1, and the Geosat Geodetic Mission. EGM96 also incorporates new surface and marine gravity data covering the globe, including the former Soviet Union.

EGM96 is a global geopotential model expressed as spherical har

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monic
coefficients complete to degree and order 360. Therefore, the sho rtest
wavelength this model can exhibit is one degree, and its resolutio n is one-half
degree (about 50 km). Although this model does not reproduce geoi d structure
at very fine resolution, it is global. We thank the many members of the project
team for making this model available.

Deriving Orthometric Heights From GPS

One key problem is deciding which orthometric height datum to u se.
NGVD 29 is not a sea-level datum, and the heights are not true ort hometric
heights. The datum of NAVD 88 is selected to maintain reasonable conformance
with existing height datums, and its Helmert heights are good appr oximations
of true orthometric heights. And, while differential ellipsoidal heights
obtained from GPS are precise, they are often expressed in the NAD 83 datum,
which is not exactly geocentric. In addition, GEOID96 rests upon an underlying
EGM96 global geopotential model, and EGM96 does possess some error of
commission.

This leads to a warning:

Do not expect the difference of a GPS ellipsoidal height at a p oint and
the associated GEOID96 height to exactly match the vertical datum you need.
The results will be close when converting NAD 83 GPS ellipsoidal h eights into
NAVD 88 elevations; but, maybe not accurate enough for your requir ement.

However, one can combine the precision of differential carrier phase GPS with
the precision of GEOID96 height differences, to approach that of l eveling.

Include at least one existing benchmark in your GPS survey (pre ferably many

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benchmarks). The difference between the published elevation(s) and the height obtained from differencing your adopted GPS ellipsoidal height and the GEOID96 model, could be considered a "local orthometric height datum correction." If you are surveying an extensive area (100+ km), and you occupy a lot of benchmarks, then you might detect a trend in the corrections up to a one part-per-million level. This may be error in the GEOID96 model.

We do not currently consider geoid-corrected GPS orthometric heights as a substitute for geodetic leveling in meeting the Federal Geodetic Control Subcommittee(FGCS) standards for vertical control networks. Studies are underway, and many less stringent requirements can be satisfied by geoid modeling. Widespread success has been achieved with the preceeding models, GEOID93 and GEOID90.

Future Plans

A research effort is underway to improve geoid height estimates in the future, perhaps at the 1-cm accuracy level. One important direction is integrating gravity data with GPS and geodetic leveling measurements, and the study of error in GPS ellipsoid heights and in the NAVD88 vertical datum. It is likely that this research, in conjunction with the completion of the state upgrade GPS surveys, will yield a significant improvement to our geoid model in 1999.

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Visit our web site:
http://www.ngs.noaa.gov/GEOID/geoid.html

Best Wishes!

README file 9-oct-96 dgm/das

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The following is an excerpt from the VERTCON, Version 2.00, README file.

The VERTCON 2.0 Model

The VERTCON 2.0 model was computed on May 5, 1994 using 381,833 datum difference values. A key part of the computation procedure was the development of the predictable, physical components of the differences between the NAVD 88 and NGVD 29 datums. This included models of refraction effects on geodetic leveling, and gravity and elevation influences on the new NAVD 88 datum. Tests of the predictive capability of the physical model show a 2.0 cm RMS agreement at our 381,833 data points. For this reason, the VERTCON 2.0 model can be considered accurate at the 2 cm (one sigma) level. Since 381,833 data values were used to develop the corrections to the physical model, VERTCON 2.0 will display even better overall accuracy than that displayed by the uncorrected physical model. This higher accuracy will be particularly noticable in the eastern United States.

Using VERTCON 2.0

It should be emphasized that VERTCON 2.0 is a datum transformation model, and can not maintain the full vertical control accuracy of geodetic leveling. Ideally, one should process level data using the latest reduction software and adjust it to established NAVD 88 control. However, VERTCON 2.0 accuracy is suitable for a variety of mapping and charting purposes.

The VERTCON 2.0 model expresses datum differences between NAVD 88 and NGVD 29 due to removal of distortions in the level data, as well as due to the physical differences in the height systems. In some rare cases, these local NGVD 29 distortions could be 20 cm or more. If both ends of your old

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vertical survey were tied to one of these "problem" lines, then th
e datum
difference of the problem line is appropriate to use to transform
the survey
data. If both ends of a vertical survey are tied to "undistorted
lines",
then it is appropriate to use a slightly distant point to compute
the
transformation, no matter how close your survey data may approach
a given
problem line. The possible presense of a problem NGVD 29 line in
the
vicinity of your survey will become evident if dramatically differ
ent datum
transformation values are computed within a small area.

It must also be emphasized that VERTCON 2.0 is not to be conside
red
reliable beyond the boundaries of the lower 48 United States. The
VERTCON
program will interpolate values in Canada, Mexico, or in the ocean
, due
to the grid structure of the model. Those values do not contain i
mportant
model components present in the conterminous U.S. model. Future v
ersions
of VERTCON may be extended into neighboring countries.

The Defense Mapping Agency

The Defense Mapping Agency (DMA) has been of immense help in th
is
endeavor. DMA has provided a major portion of the NGS land gravit
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s 30"
elevation grids in existence. Although the work of the DMA genera
lly
precludes public recognition, their cooperation in this work is gr
atefully
acknowledged.

Other Future Plans:

A continuing development effort is underway to improve VERTCON
results.
NGVD 29 normal orthometric heights are being analyzed for localize
d monument
and/or crustal motion effects, for inconsistent adjustments, and o
ther effects.

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Computed height differences which are significantly influenced by such effects
will be flagged and rated for reliability in future versions.

For More Information

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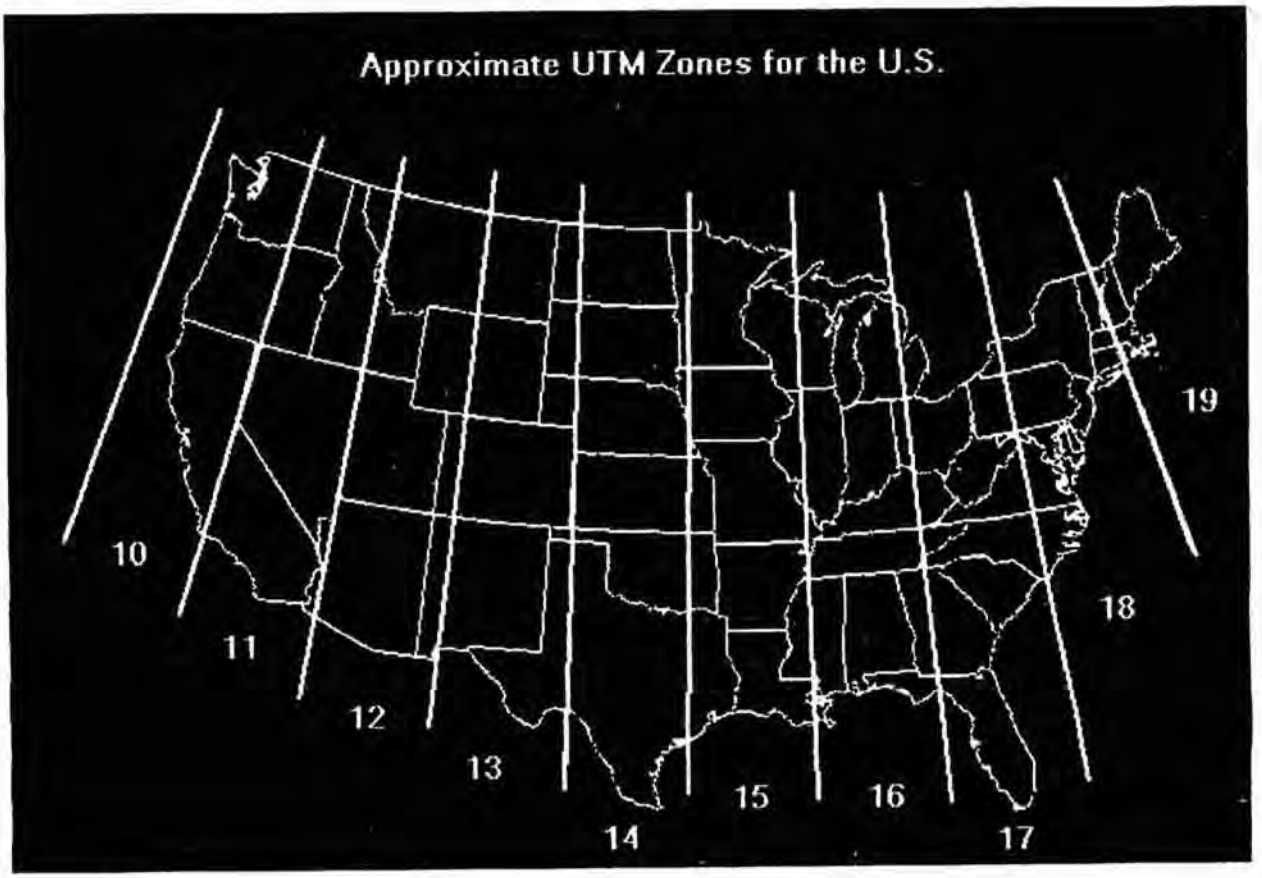
UTM zones occur at every 6° of longitude. Below are the boundaries of UTM zones for the U.S. and a diagram with the approximate boundaries for the continental U.S.

LONGITUDE					ZONE
72	W	to	66	W	19
78	W	to	72	W	18
84	W	to	78	W	17
90	W	to	84	W	16
96	W	to	90	W	15
102	W	to	96	W	14
108	W	to	102	W	13
114	W	to	108	W	12
120	W	to	114	W	11
126	W	to	120	W	10
132	W	to	126	W	9
138	W	to	132	W	8
144	W	to	138	W	7
150	W	to	144	W	6
156	W	to	150	W	5
162	W	to	156	W	4
168	W	to	162	W	3



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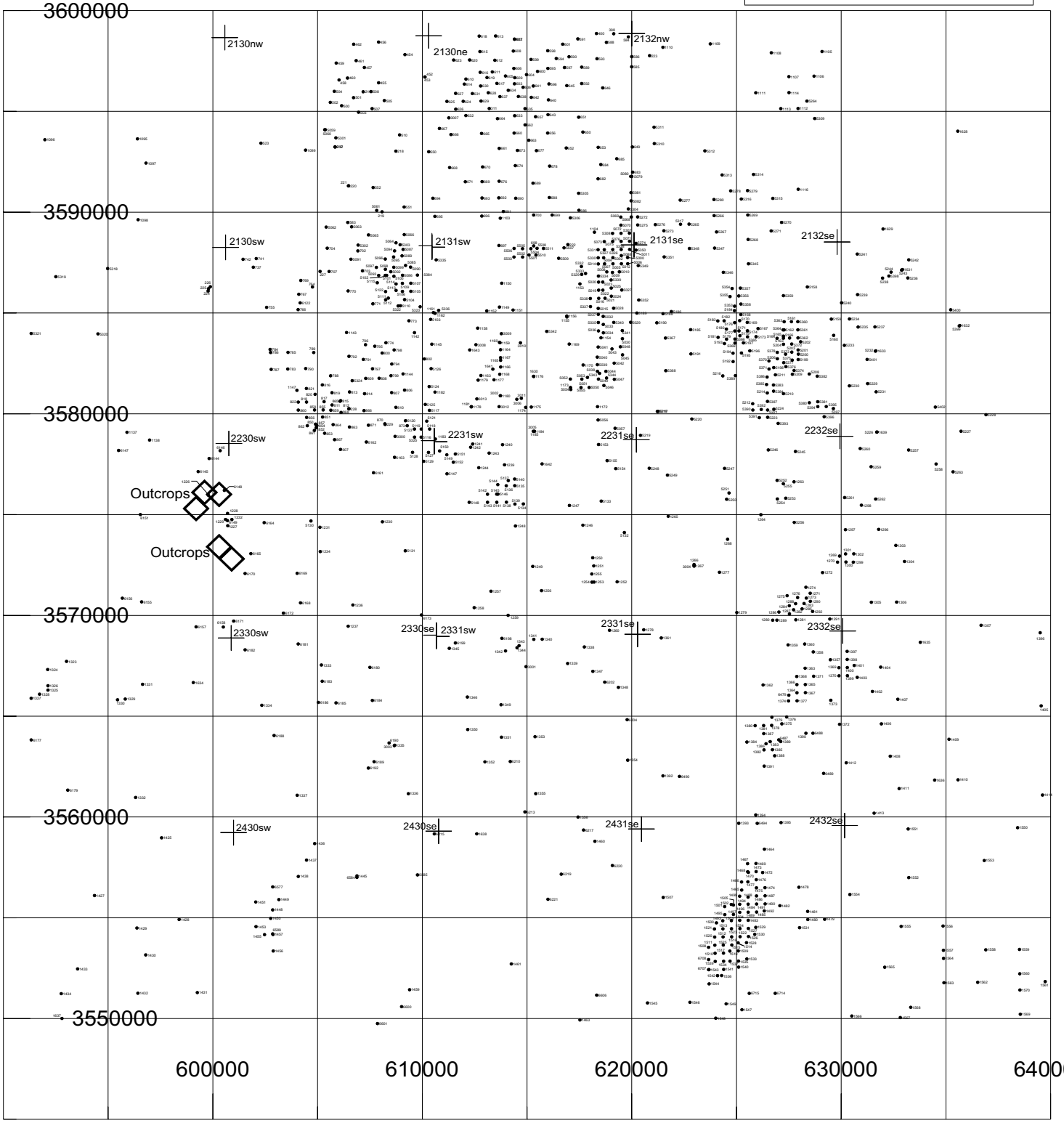
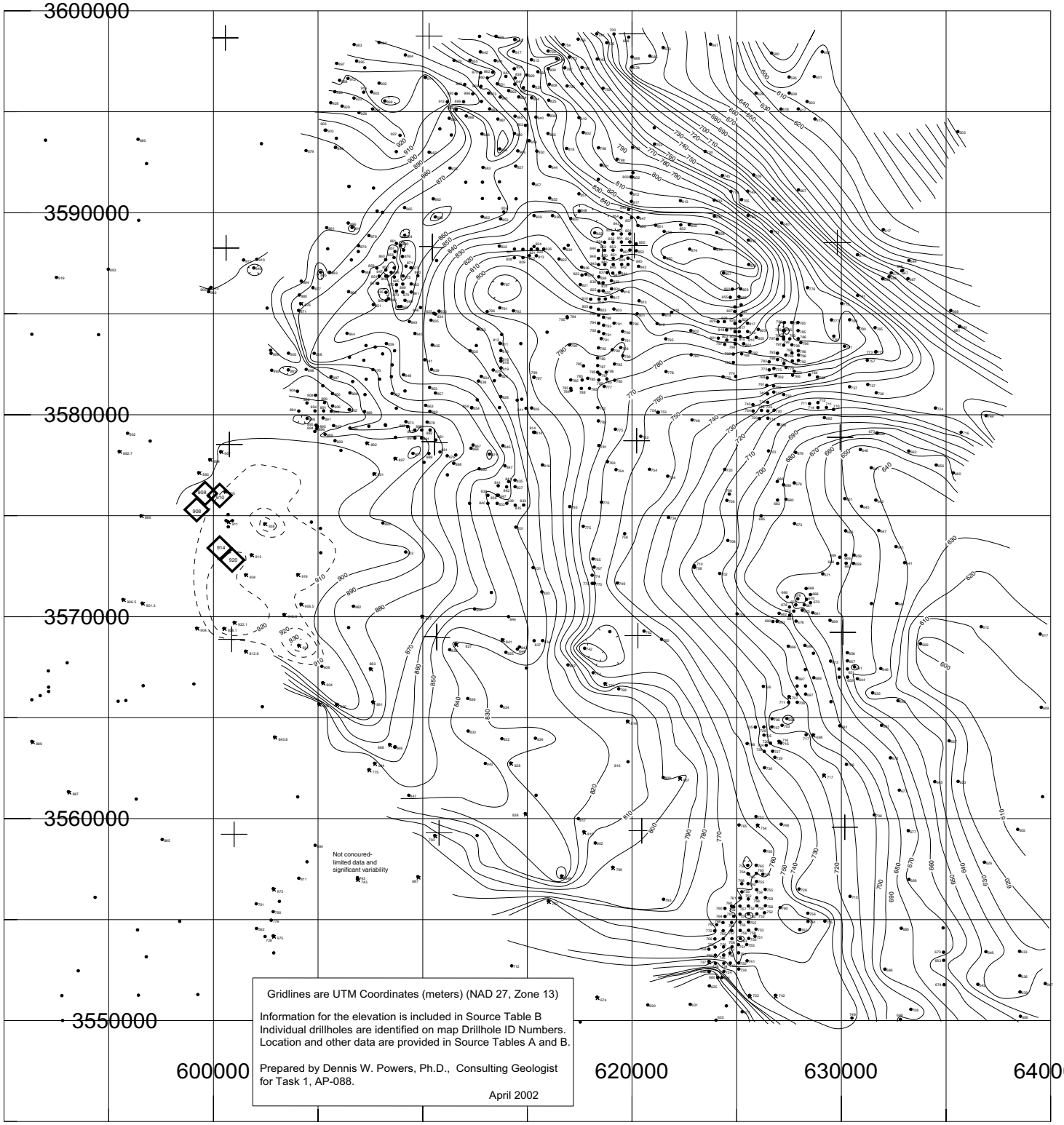
Culebra T Field Data
Drillhole ID Numbers

Prepared by Dennis W. Powers, Ph.D., Consulting Geologist
for Task 1, AP-088
Location and other data for drillholes are available in Source Tables A and B included in the analysis report.
April 2002



Culebra T Field Data
Elevation of Top of Culebra (m amsl)



Gridlines are UTM Coordinates (meters) (NAD 27, Zone 13)

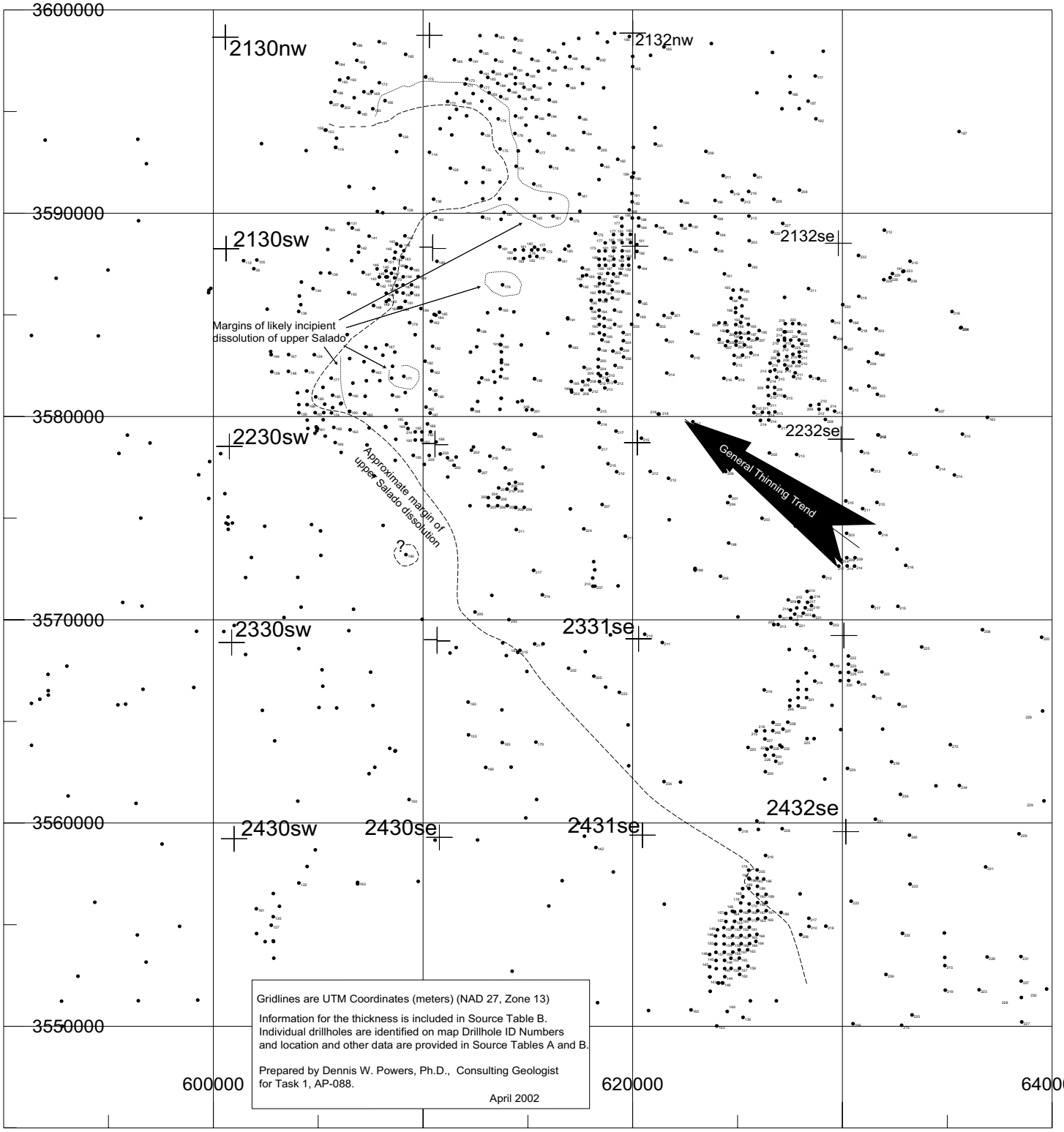
Information for the elevation is included in Source Table B
Individual drillholes are identified on map Drillhole ID Numbers.
Location and other data are provided in Source Tables A and B.

Prepared by Dennis W. Powers, Ph.D., Consulting Geologist
for Task 1, AP-088.

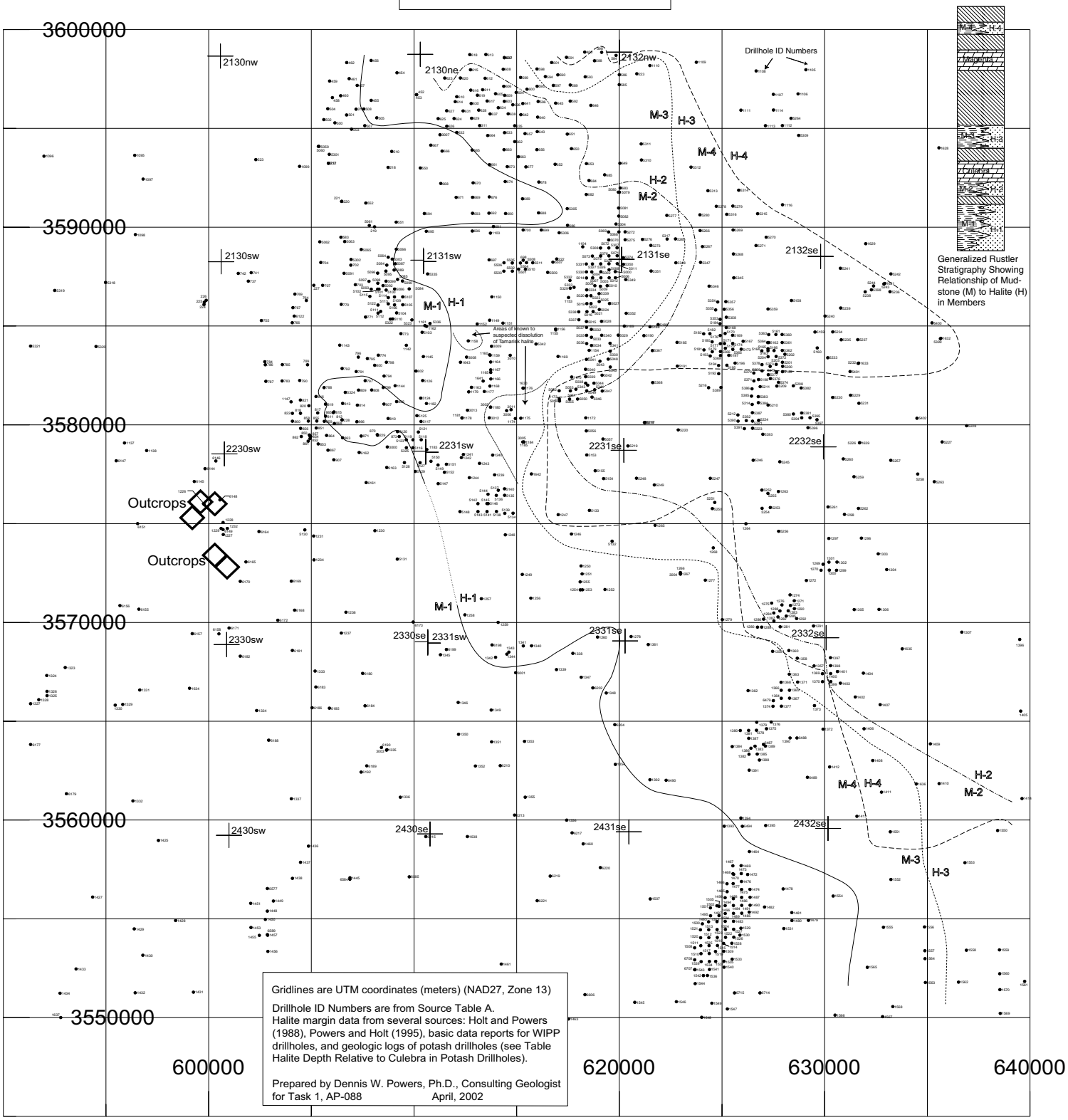
April 2002

Culebra T Field Data

Thickness from
Top of Culebra to Base of Vaca Triste (m)
Used to assist in estimating boundary of Salado dissolution



Culebra T Field Data
Rustler Halite Margins



Gridlines are UTM coordinates (meters) (NAD27, Zone 13)

Drillhole ID Numbers are from Source Table A.
Halite margin data from several sources: Holt and Powers (1988), Powers and Holt (1995), basic data reports for WIPP drillholes, and geologic logs of potash drillholes (see Table Halite Depth Relative to Culebra in Potash Drillholes).

Prepared by Dennis W. Powers, Ph.D., Consulting Geologist
for Task 1, AP-088 April, 2002

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